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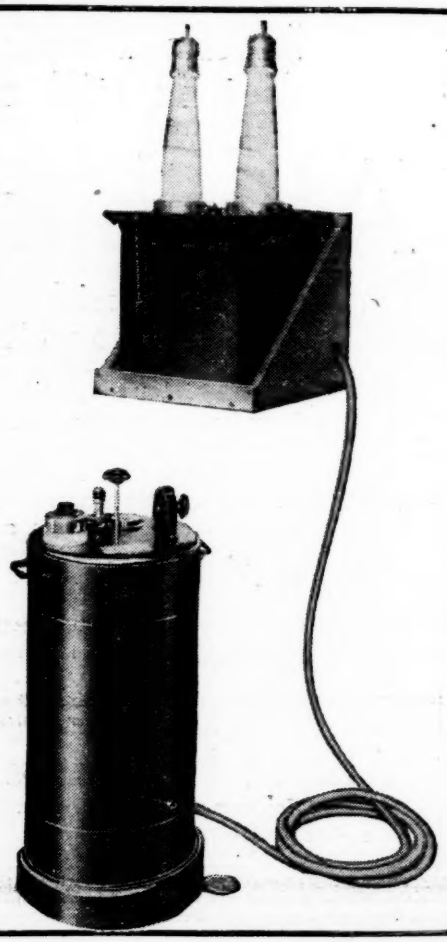

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An Address
ON
THE CONSTITUTIONAL FACTOR IN DISEASE.

DELIVERED BEFORE THE ULSTER MEDICAL SOCIETY ON NOVEMBER 17TH, 1926,

BY

ARTHUR F. HURST, M.A., M.D.OXON., F.R.C.P.,
PHYSICIAN TO GUY'S HOSPITAL.

It would seem obvious that in the practice of medicine the man is as worthy of study as the malady with which he is afflicted. But during the last twenty-five years the great advances in knowledge which have followed the application of bacteriological, biochemical, and physical methods to the investigation of disease have led to the comparative neglect of the constitutional factor, and the whole question of diatheses has come to be regarded as hardly worth serious consideration by the scientific physician. The illuminating studies on constitution by such great clinicians of the nineteenth century, as Laycock[1] and Jonathan Hutchinson[2] have unfortunately been almost forgotten by the present generation.

There are signs that a renewal of interest in constitution is taking place on the Continent and in America, where a clinic for the investigation of the subject has been started by Draper,[3] but with the exception of the classical work of Garrod on the rare conditions grouped by him as "inborn errors of metabolism," and a recent lecture by my colleague J. A. Ryle,[4] very little has been written on the subject in England. Since the war my investigations on the pathogenesis of gastric and duodenal ulcer, Addison's anaemia, and asthma have led me to regard a study of the constitutional factor in the causation of disease as a most promising field for research.

Without discussing with any thoroughness the fundamental meaning of constitution or the difficult problems of heredity, I shall confine myself mainly to a consideration of the constitutional factor in certain diseases in which I have been specially interested for many years, together with a more cursory consideration of certain other conditions in which the constitutional factor has been too much neglected, though it appears to be of paramount importance.

I do not think it is possible to improve upon Draper's conception of constitution as the sum of the anatomical, physiological, immunological, and psychological characters with which each individual is born. These depend in part upon heredity and in part upon other factors the nature of which is quite unknown. Acquired characteristics do not play any part in what I understand by the term constitution, though in the course of years they may profoundly influence it.

It is natural that considerable variations should occur among different normal individuals in each of Draper's four "panels" of constitution—anatomical, physiological, immunological, and psychological; many conditions formerly regarded as pathological are indeed nothing more than extreme examples of such normal variations. Some of these variations may be advantageous to the individual, whereas others may make him more liable than the average person to develop certain diseases. It is the latter type of variations that constitute diatheses, which may be defined as the inborn and often inherited characteristics which make an individual liable to react to physical, chemical, or psychological stimuli in such a manner that a condition of disease results.

A better knowledge of constitution and diatheses should make it possible to prevent some diseases hitherto regarded as unpreventable, to recognize others in an earlier stage than is at present possible, and to avoid recurrences in recurrent disorders when one attack has been overcome.

THE ANATOMICAL AND PHYSIOLOGICAL BASIS OF GASTRIC DIATHESES.

(a) *Variations in Tone, Position, and Length of Stomach.*

Though atonic dilatation of the stomach was a common diagnosis before the days of x rays, and though hypotonus is still frequently diagnosed by radiologists, the condition is rare. In 100 consecutive cases of abdominal disorder examined with the x rays by Dr. P. J. Briggs at New Lodge Clinic hypotonus was present only in 6, and in only one of these did it appear to have any direct or indirect connexion with the symptoms present. Though gastric hypertonus is a diagnosis frequently made by radiologists, I doubt whether it ever really occurs. Accurate observation has proved that the tone of the high, so-called hypertonic stomach is no greater than that of the stomach of average position, or than that of the so-called dropped stomach.

The term "dropped stomach" is as incorrect as "hypertonic stomach," for "gastroptosis," or dropping of the stomach, should indicate that the stomach has fallen from a higher position which it had at one time occupied. But there is never any evidence that this has occurred; as I first pointed out twenty years ago, the condition thus described is quite common in healthy people with excellent abdominal muscles who have always been thin, and it also occurs, though less frequently, in comparatively stout individuals. On the other hand, the so-called hypertonic stomach may exist in people who have lost much weight and whose abdominal muscles have become very weak; nothing, in fact, will make such a stomach drop materially, just as nothing will make the so-called dropped stomach rise to the level of the average stomach.

The only satisfactory explanation for the remarkable difference between the appearances of the so-called hypertonic and the so-called dropped stomach is to regard them as anatomical variations from the average normal length. Moody[5] and his colleagues have shown that the high stomach occurred in 17 per cent. of 300 healthy young men and 7 per cent. of 300 healthy young women, and that the low stomach occurred in 3.6 per cent. of the men and 15 per cent. of the women. This means that there are great variations in the normal length of the stomach, just as there are great variations in the normal length of the trunk and the limbs; according to Faber,[6] measurements on the x-ray screen show that the length of the stomach of normal individuals varies between 18 and 84 cm.

The stomach swings between the part of the oesophagus which passes through the diaphragm about one inch above the cardia and the junction between the duodenal bulb and the descending retroperitoneal portion of the duodenum. If it is short, it assumes the diagonal or almost horizontal position of the so-called hypertonic stomach; if it is long, it assumes the vertical position with the steeply ascending pyloric part of the so-called dropped stomach. These types of stomachs should be renamed respectively the "short stomach" and the "long stomach," and they should be regarded as nothing more than normal anatomical variations from the stomach of average length.

(b) *Variations in Gastric Secretion.*

All the earlier investigations on gastric secretion were carried out on patients suffering from disorders of the stomach. It is therefore not surprising that hyperchlorhydria was regarded as a pathological condition, sometimes secondary to gastric ulcer and sometimes primary; achlorhydria was also thought to be always pathological, and a result of cancer of the stomach or gastritis. The introduction of the fractional test meal by Rehfuss and his colleagues, and their investigations, together with those of Bennett and Ryle[7] on normal individuals, have shown that both hyperchlorhydria and achlorhydria are simply extreme variations from the average normal secretion, occurring respectively in about 10 and 4 per cent. of healthy people. They are therefore constitutional conditions, and are compatible with perfectly good health. It is doubtful whether hyperchlorhydria is ever a secondary condition, though achlorhydria is not an uncommon result of gastritis

and carcinoma of the stomach. Hyperchlorhydria predisposes to duodenal ulcer, but does not result from it; its supposed association with gastric ulcer is now known to be a myth.

Gastric Diatheses.

Campbell and Conybeare[8] have shown that the short stomach is often associated with hyperchlorhydria, and occurs most commonly in the hypersthenic type of individual. I have elsewhere described the condition in which this short rapidly emptying stomach, which secretes an abundant and very acid juice, occurs as the *hypersthenic gastric diathesis.*[9]

The long stomach is generally associated with a normal or low gastric acidity. In contrast with the short stomach, it occurs especially in individuals of asthenic type with long chests and narrow intercostal angle. It may appropriately be referred to as the *hyposthenic gastric diathesis.*

In normal individuals the stomach contains food throughout the day (T. I. Bennett), whereas in those with the hypersthenic gastric diathesis there are several hours in which it is empty except for the continuous secretion of acid gastric juice. Many of the latter individuals are habitually hungry already three hours after a meal, and for this reason they may form the habit of taking a little food or drink at such times. If this is not done the duodenal bulb is bathed with very acid juice for several hours each day; when for any reason an acute ulcer develops in the duodenal bulb of such an individual, instead of healing very rapidly without the production of symptoms, as it would in an average person, a chronic ulcer is likely to form. The hypersthenic gastric diathesis is, in fact, the essential predisposing cause of duodenal ulcer. The motor and secretory signs of the diathesis are as obvious in very early cases as in late ones, and they persist after the ulcer has healed. As the diathesis is frequently familial, duodenal ulcer also often occurs in more than one member of a family; in other cases there is evidence of the diathesis without ulceration in some members of a family, one or more of which have an active ulcer. In one family the father and two out of nine children were dyspeptic, and four others had duodenal ulcer, one dying from a perforation; in another the mother and all three sons and one grandson had duodenal ulcer. The hyposthenic gastric diathesis probably bears a similar relation to gastric ulcer; as it is also familial, gastric ulcer frequently occurs in more than one member of the same family, but in the very unusual cases in which a gastric ulcer occurs in one member and a duodenal ulcer in another, there is sometimes evidence of one diathesis in the father's family and of the other in the mother's.

The relative frequency of the two diatheses in men and women in health found by Moody and his colleagues explains both the greater incidence of duodenal than gastric ulcer and the relative frequency of the two conditions in men and women, especially when the effect of excessive smoking, which is rare in women, on the pathogenesis of duodenal ulcer is also taken into account.

Although caused, no doubt, by an unusual degree of tonic activity of the vagal nuclei, this is strictly localized to that part which controls the activities of the stomach, as it is not accompanied by a slow pulse, nor any special tendency to asthma; I do not believe that such a condition as general vagotonia exists. It might have been expected that the hypersthenic gastric diathesis would be associated with a tendency to hyperpiesia, as both conditions occur particularly in people of hypersthenic build, and that the hyposthenic gastric diathesis would be associated with hypopiesia. However, the average systolic blood pressure of 20 consecutive cases of duodenal ulcer (11 men and 9 women) seen at New Lodge Clinic was 134.7 mm., which is almost identical with that of 20 cases (11 men and 9 women) of gastric ulcer (134.2 mm.).

In his investigations on the facial characteristics of individuals suffering from various diseases, Draper[3] unfortunately grouped the cases of gastric ulcer and duodenal ulcer together. He records, however, the interesting experience of seeing three cases of perforated gastric ulcer lying side by side in a hospital in New York.

"The likeness of the three, one to another, was striking, and anthropometrically their measurements and proportions were almost superimposable, yet they had their origin in three distinct racial roots—one an Anglo-Saxon, one a Pole, and one an Italian from the shores of the Mediterranean."

In an individual with the hypersthenic gastric diathesis the nervous dyspepsia caused by overwork, the reflex dyspepsia caused by chronic cholecystitis or appendicitis, and the toxic dyspepsia caused by excessive smoking all tend to simulate the clinical picture of duodenal ulcer, although the *x* rays show no deformity, the stools contain no occult blood, and removal of the exciting cause without any dietetic or drug treatment rapidly leads to complete disappearance of the symptoms.

Constitutional Achylia Gastrica.

Achlorhydria was present in 4 out of the 100 normal students examined by Bennett and Ryle. It occurs in early childhood and is often present in several members of a family. In such cases it is presumably due to an inborn error of secretion, a constitutional and often familial achylia gastrica, which is not associated with any known structural changes in the mucous membrane of the stomach.

The absence of normal gastric digestion and the loss of what Knott has described as the antiseptic barrier of the stomach, which normally prevents the access to the intestines of bacteria derived from the food or from pathological secretions in connexion with the teeth, tonsils, or nasal sinuses, may lead to a great variety of ill effects, though it is remarkable how many people who are known to have had complete achlorhydria for many years, and perhaps for all their lives, are apparently none the worse for it. The chief digestive symptoms are nausea, flatulence, and heartburn, with vague epigastric discomfort; diarrhoea is very common, achlorhydria being the most frequent cause of intermittent attacks of diarrhoea lasting for many years. The dyspepsia of achlorhydria is often associated with acne rosacea (Barber and Ryle[10]), which, like the dyspepsia, is rapidly cured by the administration of acid.

The absence of hydrochloric acid must predispose to infections derived from food or water, such as typhoid fever and bacillary and amoebic dysentery. Streptococcal infection of the caecum from the mouth or nasopharynx often leads to chronic appendicitis, achlorhydria being found in 33 per cent. of cases (Bonar[11]).

Knott[12] has shown that achlorhydria not only allows the access of bacteria from the mouth to the duodenum, but, by causing an increase in the alkalinity of the small intestines, it permits bacteria to spread from the colon to the small intestines, the reaction of which normally inhibits their development. The consequent invasion of the duodenum with pathogenic strains of *B. coli* often leads to ascending infection of the biliary passages; thus achlorhydria is found in about 25 per cent. of patients with cholecystitis (New Lodge Clinic statistics) and 49 per cent. with gall stones (Bonar[11]).

In rheumatoid arthritis if the primary oral or nasopharyngeal sepsis is associated with achlorhydria secondary streptococcal infection of the intestines occurs; this is found in about 40 per cent. of cases, and especially in the severe and chronic, in which incomplete recovery or relapses follow eradication of the primary foci of infection.

The Constitutional Basis of Addison's (so-called Pernicious) Anaemia and Subacute Combined Degeneration of the Spinal Cord.

The only disease in which achlorhydria is always or almost always present is the syndrome of Addison's anaemia, subacute combined degeneration of the spinal cord, and Hunterian glossitis. (For the sake of brevity the components of the syndrome will be referred to as A.A., S.C.D., and H.G. respectively.)

The disease is caused by infection of the small intestine, as a result of which a haemolysin and a neurotoxin are produced in varying proportions. In about 85 per cent. of cases of A.A. symptoms or signs of S.C.D. appear before death, and the characteristic pathological changes are found *post mortem*, and in all cases of S.C.D. megalocytosis and generally more or less well marked A.A. develop at some stage in the disease. In a large majority of both conditions H.G. is found, and I have seen a few cases in which

the latter was the earliest and most prominent symptom but signs of very early A.A. could also be detected.

It has long been known that achlorhydria is almost invariably present in A.A., and in 1922 Bell and I[13] drew attention to its constant presence in S.C.D. In 50 cases of A.A. at New Lodge Clinic and in the Medico-Neurological Clinic at Guy's Hospital achlorhydria was present in all except one, in which the symptoms had developed as a direct sequel of chronic obstruction of the end of the ileum, and among several hundred published records in not more than 1 per cent. was any free acid found. Test meals have been given to 33 of our cases of S.C.D. and to 2 cases of H.G.; achlorhydria was present in all, and Vanderhoof[14] obtained a similar result in all of 29 cases of S.C.D. In a discussion before the Royal Society of Medicine in February, 1925, Dr. H. J. Macbride threw doubts upon the constancy of achlorhydria in S.C.D. as a result of statistics collected from the records of the National Hospital. He tells me, however, that his more recent experience confirms our views, and he now doubts the accuracy of the observations upon which his original statistics were founded.

The achlorhydria precedes the development of the disease: 21 cases have now been recorded in which it was known to be present from one to twenty-five years before the onset of symptoms of A.A. or S.C.D., and in many others digestive symptoms clearly due to achlorhydria have been present for many years. Achlorhydria occurred in several cases of mine in which the haemoglobin percentage had not yet fallen below 80 or 90, but the characteristic megalocytosis was found, the blood having been examined on account of the presence of symptoms of S.C.D. or simply of H.G.

There is nothing characteristic about the achlorhydria. In an analysis of 43 private cases of the A.A.-S.C.D.-H.G. syndrome[15] I found that in 6 (14 per cent.) the achlorhydria was clearly secondary to gastritis arising from food poisoning. I have also seen 3 cases in which it was secondary to alcoholic gastritis and 2 to cancer of the stomach, and others have been recorded in which it followed gastro-enterostomy and complete gastrectomy. In the remaining cases I believe it is due to the constitutional achylia gastrica, which occurs in about 4 per cent. of normal people, although, of course, only a small proportion of these ever develop the disease. Perhaps the strongest evidence in favour of this view is the frequency of a family history of A.A. or S.C.D. in patients suffering from these diseases; it occurred in 12 of the series of 43 cases (28 per cent.) just referred to, and has been recorded in 65 cases by other authors.* In several instances three, four, and even six members of a family have been affected, occasionally in three generations. Still more striking is the frequency with which achlorhydria is found in other members of the family: A.A. occurred in one or more members of the family of six patients of mine suffering from various conditions, who were found to have achlorhydria but a perfectly normal blood picture and nervous system, and twenty-six similar family histories have been recorded by other authors.

The constitutional basis of Addison's anaemia is associated, according to Draper, with a characteristic appearance of the individual. Addison himself had some idea of this when he described the disease as occurring "chiefly in persons of a somewhat large and bulky frame, and with a strongly marked tendency to the formation of fat." Draper has found that they were short-chested and had broad features with unusually widely separated eyes and large jaw angles (Fig 1).

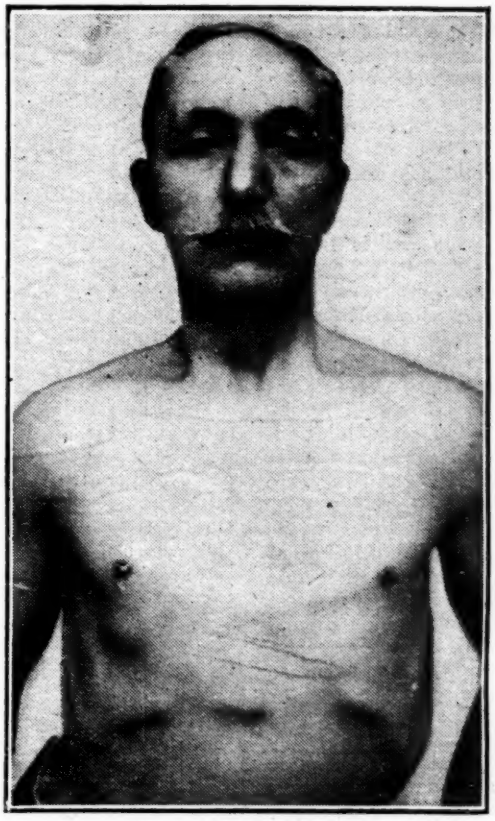

FIG. 1.—A patient with Addison's anaemia showing typical facies and wide epigastric angle.

Gastric Diatheses in Prophylaxis and Treatment.

The knowledge that the three gastric diatheses I have described predispose to certain diseases should make it our ambition to recognize them before the latter have developed, so that we may give such advice that successful prophylaxis can be instituted. The brothers, sisters, and children of patients with the A.A.-S.C.D.-H.G. syndrome should be given test meals. If they are found to have achlorhydria, they should, in common with everybody else in whom the condition is discovered, be advised to take a drachm or more of hydrochloric acid, fasting, in the morning and at lunch and dinner for the rest of their lives; given with sweetened orangeade or syrup of grenadine it makes a very palatable beverage. Such an acid drink would provide an admirable prophylactic measure in the tropics against enteric, dysenteric, and other intestinal infections among individuals predisposed to them on account of constitutional achylia or hypochlorhydria.

Important as the prevention and treatment of pyorrhoea alveolaris and nasopharyngeal sepsis are in everybody, they are doubly important in patients with any one of the three gastric diatheses, in whom the sepsis may act as the exciting cause of some serious disease.

People with a family history of gastric or duodenal ulcer should be told to choose a diet free from mechanical or chemical irritants. In the case of the hypersthenic diathesis intermediate feeds are desirable, and smoking should be kept within strict limits, as it is the most important single exciting cause of duodenal ulcer. In such individuals the slightest indigestion calls for a thorough physical and radiological investigation and examination of the stools for occult blood; if this is done, an ulcer should be discovered in the early and easily curable stage.

When a patient has recovered from a gastric or duodenal ulcer as a result of medical treatment and the removal of all foci of infection, it is essential that he should be given definite instructions with regard to diet, intermediate feeds, and restriction of tobacco and alcohol, which he must follow for the rest of his life; he should be told that he has the ulcer diathesis, and that there is likely to be a recurrence unless he strictly follows the directions he has been given. If patients upon whom an operation has been performed for ulcer were given similar rules, the frequent occurrence of jejunal ulcer and of other less serious ill results could almost always be prevented.

When a patient recovers from Addison's anaemia, as shown by the normal blood picture (except sometimes for persistent megalocytosis) and negative van den Bergh's test, it is often said that his recovery is only apparent and a relapse is inevitable. The truth is that he has recovered from the disease, but not the diathesis; he is therefore likely to reinfect his intestines and develop a new haemolytic or neurotoxic attack, just as patients with the hypersthenic gastric diathesis who have recovered from duodenal ulcer are likely to develop a new one, unless sufficient care is taken. It is therefore essential that he should continue to take acid, however well he may feel, and he

*I have never obtained a family history of the disease in hospital patients, whose knowledge of the medical history of their relatives is generally so incomplete and inaccurate as to be quite valueless.

should have his mouth, throat, and nose periodically inspected in order to arrest the development of any new focus of infection at the earliest possible moment.

THE RELATIVE IMPORTANCE OF CONSTITUTION, PREGNANCY, AND INFECTION IN THE DEVELOPMENT OF GALL STONES.

There are three well established facts about gall stones.

First, they frequently occur in more than one member of a family. Chauffard obtained a history of the disease in the relatives of 34 per cent. of his cases. From this it has been concluded, especially by French authorities, that there is an important constitutional factor in the pathogenesis of the disease. This has been supposed to be a constitutional cholesterolaemia, as Chauffard found excess of cholesterol in the blood in 95 per cent. of 46 patients with gall stones, Bell, and subsequently Shiskin, in 60 per cent. of 101 cases under Moynihan, and Alexandresco-Dersca in 75 per cent. of 41 cases, though Campbell found no excess in 10 cases under my care.

Secondly, gall stones are found with equal frequency in men and in childless women, but for every childless woman with gall stones there are four who have had one or more children. From this it has been concluded that pregnancy is a very important exciting cause, a conclusion which appeared to be confirmed by the discovery of constant excess of cholesterol in the blood (Chauffard) and in the bile (McNee) in pregnancy.

Thirdly, in the vast majority of cases there is definite clinical and pathological evidence of cholecystitis having preceded the development of the stones.

The general conclusion might, therefore, be drawn that cholecystitis gives rise to gall stones in individuals in whom the quantity of cholesterol in the blood and bile is excessive, either as a result of an inherited constitutional deficiency in cholesterol metabolism or as a result of pregnancy. This is the view put forward especially by French physicians, and I was inclined to accept it until, in preparing this address, a more careful consideration of the data upon which it was based revealed several hitherto unsuspected fallacies.

In the first place the high incidence of gall stones in the general public was ignored in discussing the question of heredity. The bodies of about 10 per cent. of all people dying in adult life contain gall stones. An average individual, in replying to a question about his family history, will think of his brothers and sisters, parents, uncles, and aunts, and grandparents. If three is taken to be the size of an average family, then he will consider four grandparents, two parents, four uncles and aunts, and two brothers and sisters, a total of twelve. Supposing two of the uncles, aunts, brothers, and sisters died before they reached adult life, ten relatives are left, and of these one is likely to have had gall stones, as they occur in 10 per cent. of adults. The conclusion is that everybody is likely to have a near relative who has gall stones or will have gall stones before his or her death. Supposing that the diagnosis is made in only one case out of three, we are left with 33 per cent., which is the figure given for the occurrence of a family history of the disease in patients with gall stones. It is clear, therefore, that such a history is no more common among patients with gall stones than would be expected from its incidence in the general population.

With regard to the influence of the hypercholesterolaemia of pregnancy on the pathogenesis of gall stones, it is necessary to remember that about four women out of every five have one or more children before they die. It is obvious that, apart from any special liability to the disease, four women who have had children will have gall stones for every one woman who has had no children. The relatively much greater incidence in women than in men cannot therefore be due to the influence of pregnancy.

We are thus left with cholecystitis as the only indisputable predisposing cause of gall stones. Common as gall stones are, cholecystitis is still more common, but why some patients with the latter should develop stones while others do not remains for the present a mystery. It is, of course, possible that a non-familial constitutional factor is responsible. Thus it is noticeable how frequently a patient with gall stones gives a history dating from childhood of intolerance to fats or to some special forms of fatty food. This might very well be an expression of the same constitutional abnormality in fat and cholesterol metabolism which predisposes to the production of gall stones and is sometimes associated with hypercholesterolaemia. The anthropometric studies of Draper also tend to show that gall stones occur in a definite type of individual with a deep chest, wide subcostal angle, and wide rounded face with relatively narrow eyes. Possibly, too, certain congenital variations in the anatomy and motor functions of the gall bladder and biliary tract, which predispose to biliary stasis, as suggested by Berg,[16] are the determining factors in the production of stones in an infected gall bladder.

DIABETES.

The inherited predisposition to diabetes has long been known. Combining the investigations of Williamson[17] on 300 cases and Barach[18] on 350 cases, 22 per cent. had a history of diabetes in one or more members of their family; as diabetes is the cause of about 1 per cent. of all deaths, it is clear that coincidence could account for not more than one-half of these family histories. Many diabetics, who would formerly have died before they had any children, or who would have become impotent soon after marriage, are now kept alive and capable of raising a family as a result of treatment with insulin. The great increase in the number of children of diabetics is certain to result in a greatly increased incidence of the disease.

It is a familiar fact that a large proportion of adult diabetics are obese at the time the disease develops. Thus 80 per cent. of 925 adults under the care of Joslin were over weight; in Barach's series of 350 cases 90 per cent. had become obese between the age of 21 and the onset of the disease, having gained an average of 59 lb. without any change in diet or occupation.

Priscilla White[19] found that 90 of 100 children with diabetes under Joslin's care were above the average height at the time of onset of the disease, but only 5 were as much as 10 per cent. over weight for their height. The average excess of height among other children of the same age and class was no less than $2\frac{7}{10}$ inches. It appears, therefore, that the constitutional inherited liability of the islands of Langerhans to degenerate is associated with a tendency to excessive stature in childhood and obesity in adult life.

In 40 per cent. of Williamson's 300 cases of diabetes there was a history of mental anxiety, worry, or sudden shock; in a quarter of these there was also a family history of diabetes. In 31 per cent. of the same series the patients had for long periods indulged in great excess of sugar or sweet food and drink, though not of starch; in a quarter of these there was also a family history of diabetes. Allowing for 9 patients in whom all three factors were present, an emotional or dietetic exciting cause existed in 47 of the 76 (62 per cent.) with a family history of diabetes. It is clear, therefore, that individuals with a diabetic family history ought, as far as possible, to avoid occupations which are likely to involve much mental stress, and they should be specially instructed to be very moderate in their consumption of sugar. It should also be remembered that acute infections, such as influenza, are not infrequently the exciting cause of diabetes; consequently the urine should be examined for sugar after, as well as during, such illnesses; this, of course, applies to everybody and not merely to those with a family history of diabetes.

CONSTITUTIONAL VARIATIONS IN THE REACTION OF THE URINE.

(*a*) *Nephritis.*

Osman[20] has recently shown that a special liability to the development of nephritis is present in individuals with a high acidity of the urine. Thus among 109 patients with scarlet fever, investigated with Dr. C. K. Colwill at the Monsall Fever Hospital, 14 out of 21 (66 per cent.) with a high urinary acidity (under 5 *p*H), but only 3 out of 88 (3.4 per cent.) with a low urinary acidity (over 5 *p*H), developed albuminuria or nephritis. In another series of observations on 431 cases of scarlet fever at Park Fever Hospital Osman and Woodfield found that the liability to albuminuria and nephritis could be almost completely overcome by giving 15 grains each of potassium citrate and

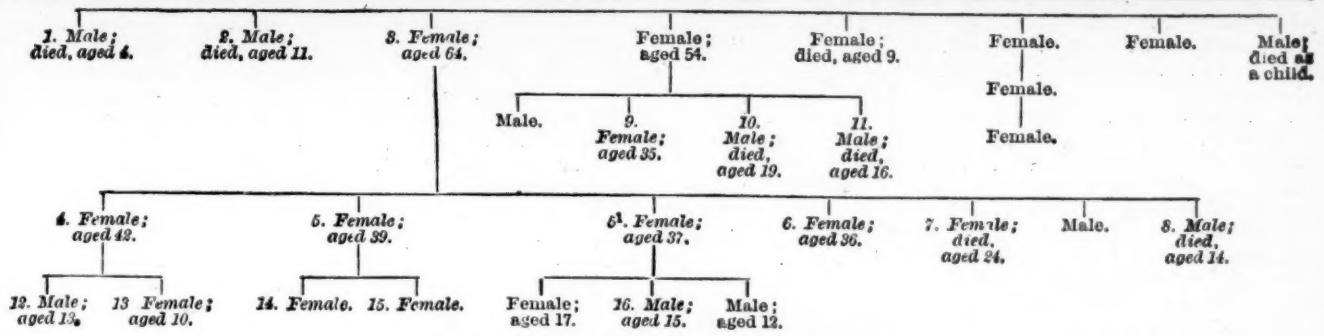

FIG. 2. Cases suffering from nephritis are italicized.

sodium bicarbonate three times a day in order to keep the urine more or less alkaline.

It is unknown why the urine of one healthy individual should be much more acid than that of another living under similar conditions and taking a similar diet, but it is exceedingly probable that it depends, in part at any rate, upon constitutional and inherited variations in the complicated biochemical processes upon which the reaction of the urine depends.

It will be interesting in the future to note whether the tendency to develop nephritis in certain families depends upon a familial tendency to excessive acidity of the urine. The accompanying family tree (Fig. 2) shows how extreme this familial tendency may be in exceptional cases; unfortunately my observations on members of the family were made long before Osman began his researches on the pathogenesis of nephritis, so I have no record as to the degree of acidity of their urine.

Very important conclusions can be drawn from Osman's work; alkalis should be given to all patients suffering from scarlet fever whose urinary acidity is high; the reaction of the urine of members of a family with a tendency to nephritis should be examined, and, if the acidity is high, they should constantly take alkalis; and, quite apart from the question of the alkaline treatment of nephritis recommended by Osman, the well known tendency to recurrence under unfavourable conditions in individuals who have once had nephritis could perhaps be overcome by the constant use of sufficient potassium citrate to keep the urine alkaline.

(*b*) *Phosphaturia and Phosphatic Calculi.*

Just as the urine in some individuals tends to be more acid than the average, so in others it tends to be more alkaline, the tendency being exaggerated during periods of mental strain and overwork. At such times the urine passed at the end of micturition may be milky, owing to a deposit of phosphates occurring in the urine whilst still in the bladder.

It is natural that individuals with this constitutional condition should be liable to develop phosphatic calculi. Patients sometimes have a history of passing such stones at intervals for many years, sometimes from one kidney only, sometimes from both.

A stout woman of 44 had passed phosphatic calculi at intervals during the last ten years. My clinical clerk, Mr. D. B. Smallshaw, found that one of her own stones, weighing 0.31 gram, lost 16.1 per cent. of its weight on being kept at the body temperature for four days in a test tube containing her own urine after it had been rendered acid by the administration of 90 grains of acid sodium phosphate four times a day. When not taking this drug her urine was constantly alkaline; after being kept in her alkaline urine for a day the stone increased in weight from 0.260 to 0.262 gram.

It seems reasonable to advise all patients whose urine is constantly alkaline, or who have ever passed a phosphatic calculus, to take sufficient acid sodium phosphate to keep their urine acid. If this is done, small phosphatic stones, which are not causing any obstruction to the urinary flow, and which are therefore subjected to the action of the urine flowing over them, might reasonably be expected to dissolve.

REFERENCES.
1 T. Laycock: *Med. Times and Gaz.*, I, 1, 1852.
2 J. Hutchinson: *The Pedigree of Disease*, London, 1884.
3 G. Draper: *Human Constitution*, Philadelphia, 1924; *Amer. Journ. Med. Sci.*, clxix, 322, 1925.
4 J. A. Ryle: *Clin. Journ.*, lv, 85, 1926; *Guy's Hosp. Gaz.*, November 6th, 1926.
5 R. O. Moody, R. G. Van Nuys, and W. E. Chamberlain: *Journ. Amer. Med. Assoc.*, lxxxi, 1924, 1923.
6 K. Faber: *Arch. d. Mal. de l'Appareil Digestif*, xvi, 969, 1926.
7 T. I. Bennett and J. A. Ryle: *Guy's Hosp. Reports*, lxxi, 286, 1921.
8 J. M. H. Campbell and J. J. Conybeare, lxxiv, 354, 1924.
9 A. F. Hurst: *Lancet*, 1922, ii, 1369, and 1923, i, 3.
10 W. H. Barber and J. A. Ryle: *Lancet*, 1920, ii, 1195.
11 T. G. D. Bonar: Ibid., lxxii, 400, 1922.
12 F. A. Knott: Ibid., lxxiii, 429, 1923.
13 A. F. Hurst and J. R. Bell: *Brain*, xlv, 266, 1922; and A. F. Hurst: Ibid., xlviii, 218, 1925.
14 D. Vanderhoof: *Arch. Int. Med.*, xxii, 958, 1923.
15 A. F. Hurst: *Guy's Hosp. Reports*, lxxvi, 287, 1926.
16 J. Berg: *Arch. f. klin. Chir.*, cxxvi, 233 and 329, 1923.
17 R. T. Williamson: BRITISH MEDICAL JOURNAL, 1918, i, 139.
18 J. H. Barach: *Amer. Journ. Med. Sci.*, clxxii, 243, 1926.
19 P. White: *Journ. Amer. Med. Assoc.*, lxxxviii, 170, 1927.
20 A. A. Osman, *Guy's Hosp. Reports*, lxxvi, 412, 1926.

(To be concluded.)

TUBERCULIN: IS IT A SPECIFIC?

BY

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THE object of this article is to inquire, Is tuberculin a specific for tuberculosis in either diagnosis or treatment?

By tuberculosis I mean an infection by the tubercle bacillus of Koch—latent tuberculosis if the bacilli be living but producing no symptoms, active if living and producing symptoms, obsolete if the bacilli have died and the lesions have healed. By specific test I mean an efficient test for the presence of a disease by a reagent derived from its specific bacteria. The modern Wassermann test does not fulfil this requirement of derivation from the same species; the agglutination test for typhoid fever does; so too does tuberculin for tuberculosis; it remains to inquire, Is it efficient?

It is made by the subcutaneous injection into a patient, whose temperature is normal, of doses (usually 1, 5, and 10 mg. in succession) of (1) Koch's old tuberculin, or Koch's lymph, or, shortly, old T.; or (2) since 1911 of similar doses of albumose-free tuberculin or T.A.F., a preparation of exactly the same strength as old T., but made from tubercle bacilli grown upon a medium containing liquid extract of asparagus but neither albumin nor albumose. Evidence of the reaction is threefold—local, general, and focal. The local reaction consists in inflammation at the site of the injection; the general reaction in fever with a temperature of 100° F. or more and the ordinary accompaniments; the focal reaction in increase of symptoms and signs at the site of the disease. The local reaction may occur alone; general and focal reactions do not occur without a local reaction unless the injection has been made directly into a vein. The local reaction is obtainable also by the dermal or conjunctival application of tuberculin.

The reaction is an active response of the body cells to the stimulus of the injected reagent. Experience shows that all patients suffering from active tuberculosis give the reaction, excepting only those who have been so treated

with tuberculin as to acquire a tolerance, and sometimes those in so far advanced a stage of the disease that their cells are too exhausted to respond. The earlier the disease, the greater is the sensitiveness of the patient to the test. The local reaction is often elicited by a smaller dose than that required for the general; the focal sometimes requires still more. It is found that patients who have been treated successfully with large doses of tuberculin some time earlier may still give the local reaction but without the general. These observations in men have been very amply confirmed by veterinary surgeons in cattle, where there are frequent opportunities for testing shortly before slaughter. A tuberculous infection is always found in animals who have reacted, even though there have been no symptoms during life. The tuberculin reaction in domestic and laboratory animals is regarded as conclusive evidence of tuberculosis. Of course, a patient who reacts may suffer from some other disease also; it is not suggested that the reaction shows that the patient's ill health is due to tuberculosis alone.

All admit that new-born children—that is, too young to have been infected—do not react. In Australia, where tuberculosis, though common, is very much less common than it is in Europe, most healthy people do not react; neither do many of the apparently healthy members of tuberculous families, and, except in very rare instances, readily explained by infection at a date subsequent to the test, those who do not react are observed to remain free from tuberculosis. It is quite common to find that members of tuberculous families even when they suffer from some other illness, such as bronchitis, do not react. Again, patients suffering from other diseases which simulate tuberculosis, but are not tuberculous, very rarely react in Australia. I have tested a dozen or more patients with hydatid of the lung, half a dozen with cancer of the lung, many with slight chronic bronchopneumonia due to suppuration in the accessory nasal sinuses, several with abscess in the lung due to a foreign body, several with thoracic empyema simulating phthisis, several with haemoptysis of cardiac origin, and numerous children with such surgical lesions as non-tuberculous glandular enlargements, Perthes's disease of the hip, etc., and although in nearly all these cases a provisional diagnosis of tuberculosis had been previously made none of them reacted. I have seen two patients who exhibited both hydatid and tuberculosis of the lung. Many of these tests were made in a public hospital or dispensary, and several of the patients were demonstrated at clinical meetings. About sixty have been described in articles in medical journals under the heading of "The exclusion of tuberculosis in diagnosis." In most of the cases the diagnosis of the other disease was afterwards conclusively established, as by evidence at operation or *post-mortem* examination. In numerous cases the patients had been observed for years without development of tuberculosis.

As the tuberculin test is made with freshly boiled tuberculin it is obvious that no harm can follow where there is no reaction. There is no more effect observed than after the injection of a similar amount of normal saline. Some say that the reaction may be harmful. I have not seen any such harm. The reaction does not mobilize the tubercle bacilli; its effect is closely similar to that of protective inoculation against typhoid or cholera, where, of course, there are no bacilli in the body to be mobilized.

We turn now to consider whether tuberculin is specific in treatment. Although only two tuberculins are advised for diagnosis many more are useful in treatment—for example, T.O.A., P.T.O., T.R., bacillary emulsion (B.E.), P.T.R., P.B.E., and, perhaps best of all, T.A.F. Old tuberculin is rarely used for treatment except to supplement a previous course by T.R. or B.E. or P.T. All these are preparations manufactured according to the directions of the late Robert Koch; T.A.F. was not available in quantity till after his death. Other physicians have used many other forms of tuberculin, and doubtless some quite good.

The object of the treatment is to evoke an active immunity in response to the stimulus of the tuberculin. This, of course, requires that the patient possess some reserve. The reaction does not mean that the bacilli in the lesions are mobilized; it means that the cells of the patient's body respond, probably not only the cells at the site of the injection which receive the largest amount of tuberculin and the cells around the lesion which receive some of the injected tuberculin in addition to the tuberculous toxins produced by the live bacilli, but also most of the cells throughout the body. Observation shows that any tuberculin injected in increasing doses at suitable intervals (for example, an increase of about 40 per cent. at intervals of four days in a mild case) produces a high degree of tolerance to itself and a less degree of tolerance to other forms of tuberculin; surely the lessening of symptoms and the improvement of health which usually occur must indicate an increasing immunity to tuberculosis.

Patients who exhibit repeated slight reactions usually do best, suggesting that each slight reaction stimulates the production of antibodies; it certainly induces fibrosis around the lesion, as evidenced by lessening and cessation of haemoptysis and expectoration, and as can often be watched in tuberculous laryngitis and in such surgical lesions as tuberculosis of cervical glands or tuberculous abscesses of joints. Again, the patients who at first are the most sensitive—that is, react most severely to small doses—usually do best, especially should the doses be increased, for this overcomes the supersensitiveness. It is hard to imagine how this could follow unless the reaction were specific.

An occasional severe reaction, while temporarily disagreeable, seems to do good rather than harm. For a time it reduces the reserve and causes an acute toxaemia. That it does not mobilize the bacilli is shown by the rapid improvement—improvement not only in comparison with the patient's state during the reaction but in comparison with the previous health.

Although tuberculin treatment allays the symptoms and restores the general health, it cannot, of course, repair damage already done. Healing of ulcers in the lung occurs not by the regrowth of lung tissue but by fibrosis and scarring. Lung that has been destroyed by excavation cannot be replaced, and if the tuberculous process is arrested the regain in health does not attain to the previous highest standard.

When patients suffer from hectic fever due to secondary infections by the streptococcus, the pneumococcus, or the influenza bacillus, tuberculin does little good or is quite useless until such time as the secondary infection is overcome. This again indicates that it is a specific—good for tuberculosis alone. It is because the infection in surgical cases is more often a pure tuberculosis that they respond better than do pulmonary cases to tuberculin treatment.

It is admitted that patients who have reacted to tuberculin may recover untreated, provided the disease is in an early stage. But because the *vis medicatrix naturae* may be effective alone is a poor reason for withholding the tuberculin which would stimulate it to greater activity. The argument that because many a patient recovers from appendicitis without operation, therefore operation is not advisable, would receive scant consideration.

To claim that the treatment is specific is not to claim that it is a certain cure. Not every patient who receives the admittedly specific antitoxin in diphtheria, in bacillary dysentery, or in tetanus, recovers.

The immunity induced by tuberculin gradually fades, so too does that of vaccinia, sometimes even that of actual variola, of measles, of plague. But unless the interval since the treatment be too long—say six or eight years—the artificial immunity is easily revived; we now require only to enliven the machinery of immunity previously produced; it is not necessary to rebuild it. One of the most striking and pleasing phenomena in therapy is the rapid improvement on the renewal of tuberculin in a patient who had previously done well and afterwards relapsed. It often happens that, although a great improvement in health results from one course of injections, complete arrest of the disease, with presumable destruction of all the bacilli, is not achieved till after a second or even a third or fourth course. I have seen many patients who after three or four courses, at intervals of a year or so (thus extending together over six or eight years), have subsequently remained well or have even continuously increased in health during the next ten or twelve years.

Conclusions.

Tuberculin is specific in diagnosis, for:

(1) It is a reagent derived from bacilli of the same species as the infection;

(2) the non-infected, whether healthy or suffering from any other disease, do not react;

(3) the infected react unless protected by artificial tolerance or too exhausted to respond;

(4) the local reaction shows that the patient has been infected; the general reaction shows that the tubercle bacilli are alive; the focal reaction shows the seat of the disease;

(5) experience in animals confirms that in men.

Tuberculin is specific in treatment, for:

(6) tolerance to tuberculin and immunity to tuberculosis increase together;

(7) tuberculin acts by stimulating the *vis medicatrix naturae*;

(8) increasing doses of tuberculin overcome the initial sensitiveness;

(9) large doses are required for prolonged good;

(10) if on cessation of tuberculin the immunity lapse it may be rapidly restored on resumption;

(11) tuberculin is ineffective against streptococci and other non-tuberculous infections: it is specific.

The evidence outlined in this article is given at length in such publications as:

Tuberculin in the Diagnosis and Treatment of Tuberculosis. W. Camac Wilkinson. James Nisbett, London, 1912.
Tuberculin in Diagnosis and Treatment. Bandelier and Roepke. John Bale, Son and Danielsson, London, 1913.
Studies in Pulmonary Tuberculosis: Its Dissemination, Specific Diagnosis and Treatment. F. Guy Griffiths. Baillière, Tindall and Cox, London, 1912.

PEPTONED SERUM AGAR IN ASTHMA.

BY

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IT is now over ten years since I tried the injection of peptone in asthma. The peptone used then was the same as I use now—namely, Armour's No. 2. I have tried many others, but some are dangerous, as they contain histamine (Witte's, etc.), and others feeble, as they contain little proteose. It is very important to observe these facts.

In the autumn of 1916 I commenced using the peptone in the case of a non-commissioned officer in the Military Hospital at Mile End.[1] I gave it subcutaneously, but, as I subsequently found, in much too large a dose; this was rectified, and I introduced the intravenous method, published in the following year.[2] The patient, aged 35, was subject about every three weeks to asthmatical attacks which lasted several days. After the peptone injections he had no attack, and he remained well. This gave me encouragement to continue and try it in others.

The treatment was not given haphazard, but was based on the experimental work of Dale, Biedl and Kraus, Auer and Lewis, Meltzer, etc. The peptone seemed to me to imitate the anaphylactic poison very closely in animals, and it might desensitize against it.

A large number of substances, crystalline as well as colloidal in nature, can produce, on first injection into the guinea-pig, a group of symptoms which are practically indistinguishable from that due to true antigen-antibody anaphylaxis. Fall in blood pressure, leucopenia, diminished coagulability of the blood, and immobilization of the lungs are all present. So is eosinophilia. The difference between these and true anaphylaxis lies in the fact that these substances produce the symptoms on first injection into the normal non-sensitized animal. Karsner and Hanzlik hence called these phenomena "anaphylactoid reactions." Of these substances peptone is most important clinically, as it is the best desensitizer and it produces no symptoms of anaphylaxis. Several authors have stated that it is the most powerful desensitizer they know of. In 1921 Dale found that peptone desensitized the sensitized guinea-pig.[3]

When injected into the blood, peptone in 5 per cent. solution produces no symptoms up to the maximum dose (2½ to 3½ c.cm.) in the large majority of cases. In some persons, however, it does produce a reaction, but these are sensitive to it. In a former paper when I mentioned that a slight reaction might be induced, this was after adding a little Witte's peptone, but as a rule I do not think it is of material benefit, except in a few cases. Peptone produces no precipitins. Some years ago I took the serums of patients well treated with Armour and Witte's peptones to the Lister Institute for examination, and no precipitins could be found by Dr. Arkwright. The same is probably true for other substances producing the anaphylactoid effects. Peptone is probably directed against the antigen-antibody product.

The effect of peptone on human beings differs very greatly, but this is true also in regard to animals. In some persons asthma or migraine very readily yields to it, while others are but little affected; an intermediate state is found in others. This is very difficult to account for. I shall give one or two illustrative cases.

A woman, aged 27, Londoner, sent to me by Dr. Embleton of University College, began to have asthma at the age of 7. She was very bad from 10 to 17, and from 17 to 21 lost it. Then it began again; she had it every few weeks. She stayed in bed a week with it. Vaccines were of no use. She tried Abrams's treatment in 1923; had no asthma while there. Her great-aunt had it. There was no emphysema. Her chest expanded 3 inches. Menses and bowels quite regular. No endocrine defect. No reaction to any protein. I had her for more than two months under treatment with peptone intravenously. I gave Lugol's iodine often in the peptone, and also parathyroid gland in small doses. She had peptone continuously up to 3½ c.cm. Her diet also was considered. No benefit was produced at any time. I then asked her to try serum peptone, but she refused.

There was nothing about this patient to distinguish her from those who do react. If the peptone is directed against the antigen-antibody product, why does it not act here? In regard to iodine and parathyroid, I have repeatedly tried them, but do not consider they add any value to the peptone. In fact, parathyroid was tried because most asthmatics are believed to have a deficiency of calcium in their blood. Now for the opposite effect:

A man, aged 55, is asthmatic and subject also to hay fever. He also frequently has bronchitis and sneezing. Sometimes the asthma is so bad that he gets no rest by day or night. Brings up much sputum. Vaccines from his own sputum did no good. He had twelve peptone injections and was quite well at the end of July last year. Then he returned on September 16th as he had a little asthma in August. I gave him peptone intravenously up to 3½ c.cm., then down to 2 c.cm., 1½ c.cm., and 1 c.cm. He also had five treatments with anticatarrhal vaccine for his bronchial trouble. He has remained perfectly free of asthma ever since. I may mention that he gave a marked hay fever cutaneous reaction with 500 units of pollen.

Such a case seems to demonstrate that we should always begin with peptone. Let it be tried for from twelve to sixteen injections. The cases which get better form a much larger percentage than those which do not.

A great many asthmatics give no dermal reaction to proteins. Most people over 45 give none, but I have found one or two severe ones to wheat, etc., in elderly persons. Young people give most reactions, but unless the reaction is to feathers, etc., the peptone will usually clear it. They often outgrow the tendency to asthma.

PEPTONED SERUM AGAR.

It has been stated above that some cases of asthma resist peptone. For such I thought out two or three years ago a modification of the peptone treatment by diluting it with the patient's own serum. In 1922 the findings of Karsner and Ecker were that non-specific desensitization with homologous serum in guinea-pigs is more effective than desensitization with heterologous serums. In the former also there were no deaths, while in the latter there were many from anaphylaxis. It is very dangerous to give a foreign serum to an asthmatic, as one drop of horse serum has been fatal. Again, Dale and Kellaway's experiments on non-specific desensitization showed that homologous serum was well fitted for this in guinea-pigs. I treated the serum of human beings with peptone by adding the peptone immediately to the drawn blood, and incubating

until next day at 37° to 40° C. The serum peptone was then pipetted off. The results were eminently satisfactory. Owing to some change in the peptone it latterly gave a coagulum of serum, plasma, and peptone.[4] The last case for which I made the serum peptone did extremely well. It was for a patient of Dr. Conder of Cheltenham.

A woman, aged 40, seen in February, 1926, first had asthma at 15. She had migraine very bad previously. Her father had migraine also, and a brother and a cousin had asthma. The asthma was better when she was carrying her two children. There was no response to protein tests. Teeth good; chest expands 2 inches. She had been treated with peptone frequently by Dr. Conder, who has a wide experience of it, but though she improved she was never quite well. I made serum peptone and sent it to Dr. Conder, giving him the dosage. It was given intravenously. In June, 1926, Dr. Conder wrote that she was wonderful, and in February of this year he reported her still quite well.

As the serum peptone was coagulated, I had to consider a new method. Now Dale and Kellaway[5] found that agar was the most powerful of the agents they used for producing anaphylactoid symptoms. Novy found the same, and states that it is thirty-three times as powerful as peptone for the production of anaphylatoxin. Dale and Kellaway found that agar sol produced death in the sensitized guinea-pig which was quite indistinguishable from that of anaphylactic shock. Agar anaphylatoxin also, in the isolated uterus, gave a pronounced contraction, while the anaphylatoxins of starch and bacteria gave none. In regard to non-specific desensitization, they made a very important observation. When guinea-pigs sensitized to egg albumen were given two doses of agar anaphylatoxin and thus rendered tolerant to it, and then, in twenty-five minutes, were given a dose of egg albumen, they died in five minutes. But when fifty-five minutes were allowed between the anaphylatoxic doses, and two and a quarter hours after the second of these the egg albumen was given, there was absolute protection. Dale thought this was due to "a disturbance in the relation of antibody in the tissues and circulating fluid"; that, in fact, the antibodies had left the cells and gone into the blood, thus causing protection. Shortly after these experiments Kellaway and Cowell,[6] using homologous serum for guinea-pigs, found that the antibody entirely leaves both cells and blood. It returns very shortly to the cells, but not to the blood until the following day. This disproved Dale's theory. They also found that an entirely different result followed the injection of peptone into guinea-pigs. Using Armour's No. 2, the antibodies remained entirely in the cells, but two-thirds of them disappeared from the blood.[7] Here was a condition which was excellent for the antigen to cause anaphylaxis (according to Dale), yet the animal withstood two to three lethal doses of the antigen. It is very difficult to say how the peptone acted. It possibly protected the antibody in the cells by producing a substance in the blood which neutralized the antigen.

Method.

It appeared to me that a combination of these methods would be more useful in asthma than one of them—that is to say, the use of the peptone and serum agar together—as they act in an entirely different manner, yet bring about in animals the same result practically. The colloidal solution is made by withdrawing two or three ounces of blood from the larger vein in the bend of the elbow into a 4-oz. tube. The arm is bandaged above and a short but wide needle introduced. The needle is attached by very short rubber tubing to a small glass tube which passes through a narrow cork fitting into the mouth of the large tube. Another small glass tube just penetrates the cork to allow the escape of air.* In about two or three minutes the tube will be half or three-quarters full. Not a drop of blood may escape. The tube is then corked with a rubber cork and left at room temperature until the next day, when the serum is pipetted off. It is best for the patient not to partake of any food for five hours previously, as the serum will then be clear. A solution of agar made by boiling 1 part in 1,000 or 1,020 of saline, is then taken, and one-fifth added to four-fifths of the serum. It is shaken up and incubated for an hour at 37° to 40° C. It will be seen how minute a quantity of agar is added, as only one-tenth of a grain is added to an ounce of serum; 2 c.cm. will contain only 1/150 grain of agar. This is much weaker than that used by Bordet, Dale, and others, but to test its efficacy I took some of the serum agar to Dr. Anrep, then of University College, who kindly tried it in guinea-pigs. A guinea-pig weighing 380 grams received 2 c.cm. of serum agar into the femoral vein. It was ill about twenty minutes. The temperature fell from 38.3° to 36.3° C. Its hair was elevated and it shuddered markedly. It did not move. Another guinea-pig weighing 450 grams similarly received 4 c.cm. The same symptoms occurred. Its hair became erected and it rubbed its nose; it also had rigors, and coughed. In about half an hour it recovered. Dr. Anrep also tried plain serum in another guinea-pig, giving 5 c.cm., but nothing occurred. "The stuff," he writes, "is no doubt toxic, but not enough to cause a real shock."

When the serum agar has been incubated for an hour, peptone powder is mixed with it in the required percentage. I found that if 5 per cent. peptone is first added it may have the effect of inducing the asthma, though this passes off after four or five injections. This only occurs in some cases. It is better to add 2½ or 3 per cent. peptone at first. Incubate for another hour, when all the peptone will have dissolved. Then mix 0.5 per cent. phenol with about 15 minims of saline, shake up thoroughly, and pour half into the serum, shaking well, then the other half. The colloidal solution, poured into a glass-stoppered sterile bottle, is now ready for use.

Though the effect of serum agar is marked in the guinea-pig, it has no general action on human beings even when incubated with peptone. There is, however, a momentary heating of the face on injection.

In a patient in whom the asthma is quiescent the peptoned serum agar is slowly introduced into the vein twice weekly in doses of 1½ c.cm., 2 c.cm., 2 c.cm., 2½ c.cm., 3 c.cm., and 3½ c.cm. After this 2½ per cent. peptone is added again and incubated as before. Then give 2 c.cm., 2 c.cm., 2½ c.cm., 2½ c.cm., 3 c.cm., 3½ c.cm., and 4 c.cm. If the patient is better reduce to 3 c.cm., 2 c.cm., and 1½ c.cm. Of course, this may have to be altered, but it is given as a guide.

Illustrative Cases.

I will now give a few cases wherein the effect of this treatment becomes apparent.

A woman, aged 54, came on May 19th, 1925. She was recommended by Dr. Hawthorne. Had had asthma since she was 21. Her father had it. Had vaccines (autogenous) made which did her harm. She had many rhonchi on expiration. No endocrine defect apparent. No protein reactions. I gave her sixteen peptone injections intravenously, beginning with 5 minims of a 5 per cent. solution, and increased by 3 minims twice a week until she had 3 c.cm., then gradually came down to 1 c.cm. After this she was quite well and remained so for a year. The asthma returned and she only had a fortnight to spare. I gave her four peptoned serum injections of considerable size. The asthma left her and she did not return for about nine months, when she had a slight, but very slight, recurrence, which soon left her.

The asthma in the above case responded well to the peptone, but the quick result of the new injections was very striking.

A man, aged 38, had been short of wind from childhood. Since June, 1926, he had had severe attacks of asthma with a good deal of expectoration. He went to Southsea, and was treated by Dr. Atholl Robertson with fifteen intramuscular peptone injections, but was no better. He had attacks night and day. He was a healthy-looking subject, with a good chest expansion. All proteins and animal substances were tried, but gave no reaction. I began with 1½ c.cm. of peptoned serum agar, and then 2 c.cm., 2 c.cm., 2½ c.cm., and 3 c.cm. He had some severe attacks of asthma during the first five injections, and was attended by Dr. Arthur Quennell of Brentwood. I then lowered his percentage of peptone, as I had begun with 5 per cent. He had no more asthma, and though for some months he had some nocturnal wheezing which was relieved by eupnine, he has had no asthmatic attack and he continues well.

The next case is that of a woman who had been twenty years asthmatic, and had tried everything for it—vaccines, autogenous and stock, intramuscular peptone, etc.—and was no better.

The patient was brought to me by Dr. Wilson Smith of Harrow. She was aged 47 and had several children. She looked healthy, but thin. I began with 1½ c.cm. and went up to 4½ c.cm. She stood it very well and was looking healthier. Her blood had improved greatly. There was no facial redness. Then she had

* The original of this was shown to me by Mr. Gover of Guy's Hospital. The apparatus must be well cleaned after use.

3 c.cm. for the tenth and 2 c.cm. for the eleventh injection. She had no asthma all this time, though previously she was confined to bed every two or three weeks. She has remained well, except for two slight attacks in about three months.

In view of the fact that she had tried everything previously with no benefit, this case was very striking, and showed the rapidity with which the peptoned serum agar acted.

A man, aged 27, was sent to me by Dr. Randall of Wimbledon on November 24th, 1926. He had had asthma since he was 17. It is in his family. He went to Shanklin one year and was so bad that he had to leave. Then he went another year and was never better. This is a curious fact. I asked Dr. Randall to give him peptone, which he did intramuscularly, with but little effect. I then gave him nine injections of peptoned serum agar, from 1½ c.cm. to 4 c.cm. During the first three or four injections his asthma was but little better. It then entirely disappeared. Dr. Randall gave him the last three injections—2 c.cm., 1½ c.cm., and 1 c.cm. He remained quite well for about six weeks. Then he took a change, which made the asthma come back a little. He is now free from attacks, but is a little wheezy at night sometimes. He writes that he is highly satisfied with his condition.

These are cases of great interest, and show the treatment to be very valuable. But I have had a few cases which did not respond to it; these form a very small percentage.

Women are much more subject to endocrine disturbance than men. The thyroid and the ovaries are the principal offenders.

A girl, aged 12, was brought to me from Lichfield by her mother. She looked healthy and was well grown. Her sister had horse asthma. I ordered peptone for her, which was given by her school doctor intramuscularly. She was no better. Dr. Rowlands of Lichfield then injected it into the vein, when she greatly improved, but the asthma returned. She was brought back to me in September, 1926. Her mother told me she had menstruated, but it was very scanty. I ordered her 1 grain of thyroid extract a day, and 5 grains of ovarian extract twice a day. I also prepared peptoned serum agar for her, and Dr. Rowlands gave her the injections. She has been quite well since. Her menses became much more profuse after the tablets of ovarian substance.

It will be noted that though intramuscular injections of peptone did her little good, yet she was much better after those given intravenously. I do not consider a patient should be left without trying the intravenous method. I give the intramuscular (in the back of the upper arm) only in young children and weak elderly persons. But, although quite safe, the majority of doctors do not like giving it intravenously.

The ovaries contain a hormone which has been much inquired into lately. Pratt[8] declares that it exists in the Graafian follicles, corpus luteum, and placenta. S. Asdell and F. Marshall, F.R.S.,[9] state that the hormone injected subcutaneously produces typical pro-oestrous change in the uterus of the bitch and changes in the vaginal epithelium.

Some (Coca, etc.) consider that asthma and hay fever are allergies, but they are not anaphylactic. I believe that, though they are allergies, they are of the family of "toxic idiopathies," and are to be considered anaphylactic. An allergy differs from an artificial anaphylaxis, as an allergic patient will react the first time he comes in contact with a protein to which he is naturally sensitive. Allergy has the same fundamental nature as anaphylaxis; I have discussed this elsewhere.[10] Huber and Koessler[11] place the pollen extracts as antigens, producing characteristic anaphylactic reactions in guinea-pigs, and antibodies are found in the blood of properly sensitized animals, also positive broncho-constriction is produced. The view of Coca has been adversely criticized by van Leeuwen in his recent work on allergic diseases.

Peptoned serum agar must be prepared very carefully. The greatest care must also be made in injecting it into the vein, which must be done slowly. I always use a No. 12 needle. The piston of the syringe must always be withdrawn a little when the needle is supposed to be in the vein, and if some blood comes into it, it is all right. Otherwise trouble may ensue. Those who make and give it properly will be well rewarded.

REFERENCES.

[1] Auld: BRITISH MEDICAL JOURNAL, 1917, i, p. 580. [2] Idem, ibid., 1918, ii, p. 49. [3] Idem, ibid., 1921, i, p. 696. [4] Idem, ibid., 1926, ii, p. 732. [5] Dale and Kellaway: *Phil. Trans. Roy. Soc.*, 1922, Series B, vol. 211, p. 273. [6] Kellaway and Cowell: *Brit. Journ. Exper. Pathol.*, 1922, iii, 6, 268. [7] Auld: *Lancet*, 1923, i, p. 790. [8] Pratt: *Amer. Clin. Med.*, January, 1927, p. 669. [9] Asdell and Marshall: *Proc. Roy. Soc.*, March 1st, 1927, p. 185. [10] Auld: *Lancet*, 1923, i, p. 790. [11] Huber and Koessler: *Arch. Int. Med.*, 1925, 36, p. 761.

THE TREATMENT OF DIABETICS AS HOSPITAL OUT-PATIENTS.*

BY

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THE difficulties in the way of the successful investigation and treatment of diabetes mellitus in the ordinary out-patient department of a general hospital are familiar to every physician. At the Salford Royal Hospital an attempt has been made to meet them in a special out-patients' clinic for all diabetic cases. The clinic has been in my charge under the direction of the honorary medical staff.

In presenting this account of the first year's working of the clinic it must be pointed out that the work has not been undertaken from the "research" point of view, but as a matter of necessity, and that nearly all our patients are of the labouring class, uneducated and financially badly off—not at all promising material for elaborate dietetic treatment. A few were of the artisan class, one a clerk, and one—an incorrigible carbohydrate "smuggler"—was a schoolmistress.

The functions of the clinic are investigation and control of patients who are sent to the clinic from the wards, from the general out-patient department, and occasionally direct from the practitioner.

All cases were divided, before investigation, into the two groups of severe diabetes mellitus, and of glycosuria of other origin. In the first group were included all cases with ketosis or a short acute history, and all cases in young adults and children. Such patients were immediately admitted to the wards for full investigation and control before re-discharge to the clinic. The second group consisted of patients whom it was thought safe to investigate as out-patients. Investigation consisted of blood and urinary analysis and of sugar tolerance curves; the latter, unfortunately, were not always possible to perform owing to pressure of work, but they were performed in at least all doubtful cases. In a few instances patients were admitted to the wards for a day or two for tolerance estimation.

Classification of Cases.

After investigation all cases were classified into four groups. Group I consisted of all cases considered on clinical grounds to be definite diabetes mellitus. Group II consisted of diabetics of the milder elderly type, whose blood sugar—taken four hours after breakfast—was constantly at or about 0.180 per cent. or more; whose urine contained sugar, often in large amount, but no acetone; and whose weight remained constant or even increased. This group corresponds roughly to the hepatic group of Maclean,[1] and it is supposed that these are primarily cases of defective storage by the liver. The patients in this group were nearly all of obese type, and, with one exception, were over 45 years of age. It is certain that such persons tend to develop a condition of true diabetes mellitus, though of a mild type. Group III consisted of patients—clinically midway between the other two groups—supposedly in this category. Group IV contained three cases.

One woman of 70 had a glucose tolerance normal for her age and some glycosuria. She was considered to be a case of the "normal glycosuria of the elderly" described by Langley.[2] The other two cases in the group were glycosuria of renal origin. Their progress was interesting. The first cleared up entirely in a few weeks. The second, after remaining at a normal blood sugar level for three months, presented herself at the clinic one day with acetonuria and a blood sugar of 0.285 per cent. This patient has not attended the clinic since, but it is known that she is being treated with insulin by her own doctor.

TABLE I.—*Classification of Cases.*

Group.		No. of Cases.
I.	Diabetes mellitus	20
II.	Elderly hepatic type	14
III.	Elderly mellitus type	10
IV.	Non-diabetic glycosuria	3
	Total ...	47

There were five additional cases, but they are not included in the table as their investigation was not completed.

* A paper read before the Salford Division of the British Medical Association.

Not all the elderly cases fall into Groups II and III. Group I contained four patients over 50 years of age, one of whom was a severe case difficult to control. All four patients were of spare habit, in contrast to the obesity which was the rule in the other groups.

Conduct of the Clinic.

The clinic was held on one day a week (Friday) from 11.45 a.m. to 12.45 p.m. Each patient brought with him a sample of urine, which he handed to the nurse to be tested. He then went into the examining room and was weighed, after which he interviewed the medical officer, gave particulars of progress, home tests of urine, etc., and received any advice or help which he might require. He then went to the laboratory, where blood samples were taken by the house-physician, or by the laboratory assistant. The whole procedure took less than half an hour as a rule.

An informal atmosphere was cultivated; patients were encouraged to compare notes of their progress, blood sugar content, and so forth. Nearly all of them inquired anxiously about the "blood tests," and many of them learned to read their charts at a glance. Patients were encouraged also to watch their urine being tested, and some of the more responsible type were allowed to take charge of the weighing at times. Considerable importance was attached to this matter of "atmosphere." It kept the patients cheerful and good-tempered, enabled one to obtain their confidence, and kept them interested in their progress with the least possible tendency to depression. Those who were convicted of dietary indiscretions were good-humouredly but roundly rated in front of their fellow patients, and whilst these scoldings were always taken in good part, they seemed to have an excellent effect, and the offence was rarely repeated.

The time fixed had several advantages. It enabled women to attend and to get home in time to prepare dinner; it enabled working men to attend in their dinner hour; and, most important of all, blood specimens were taken at a uniform time. Patients were told to have breakfast at 8 a.m. so that blood specimens were taken four hours after the meal—a standard which is, for practical purposes, as good as the ideal, but obviously impossible "true starvation" level.

Control of Cases.

The tests used as a routine in controlling the cases were (1) blood sugar estimations, (2) urinary analysis, and (3) weight.

Blood Sugar Estimations.—These were performed at each visit in nearly all cases. Maclean's method for capillary blood was used. An attempt was made to keep the blood sugar of all Group I cases down to a figure below 0.135 per cent. in specimens taken four hours after breakfast. This was generally easy, the more so as cases in this group nearly all came to the clinic from the wards of the hospital, where they had been fully controlled and trained before discharge. Some of our best cases in this group had for months at a time readings varying from 0.085 to 0.130 per cent. Any sudden alteration was at once inquired into. Caution in increasing insulin dosage prevented any alarming drop. The commonest cause of a rise was found to be a "cold" or similar minor ailment. Overstrain and worry of any kind also showed their traces immediately in the blood sugar percentage. It may not be out of place to mention here that all our working-men patients reported glycosuria on the first morning of the general strike of last May. Illicit food was surprisingly rare as a cause of sporadic rises in blood sugar content. In the elderly type of case regulation was not so strict. Figures of 0.105 to 0.250 per cent. were commonest, and were found harmless; I have had more than one patient whose blood sugar, taken four hours after breakfast, was constantly 0.300 per cent. or more, who remained perfectly fit, the urine loaded with sugar but acetone-free, the weight maintained or even definitely increased, and no general symptoms of any kind occurring.

Urinary Analysis.—Patients were instructed to pass water into a clean receptacle immediately before going to bed, and upon rising next morning to urinate again into the same receptacle. In this way a composite sample was obtained of "starving" and "feeding" urine, which was regular and fairly average in composition. The urine was tested by Fehling's method. Quantitative tests were not performed, the sugar content being entered as +, ++, or +++, according to the reduction obtained. Acetone bodies were tested for by a modification of Rothera's method, which was most satisfactory. The presence of acetone was quite rare and was regarded as indicative of a serious breakdown in control, usually sufficient to warrant admission to the wards. Home examination of urine for sugar was encouraged, and in most cases insisted upon. It was found quite easy to teach patients to perform the tests. The result of the daily testing was reported at each visit and was duly charted. We attach great importance to this home testing of urine. It gives early and fairly accurate information, it keeps the patient interested in his progress, and provides a constant reminder of the need for care.

Weight.—Patients were weighed at each attendance. The week-to-week variations were not found to be of any value, but, watched over longer periods, the weight proved an index to progress, more especially in cases from Groups II and III. The behaviour of the weight was frequently the only means of distinguishing between these groups. In the true diabetic group a drop at the commencement of treatment was not uncommon, but after a certain stage had been reached the level became constant, or rose a little. In Groups II and III this preliminary loss practically never occurred. We have had patients weighing 12 st. who have been changed suddenly from an unrestricted diet to one of 1,800 calories or less who have never lost a pound in weight.

Diet.

The diet used had to be cheap and simple, but sufficient to maintain the patient at his or her usual occupation. The food ratios taken were based on those recommended by Langley,[3] and in use in the wards of the hospital for some time past. The actual carbohydrate:fat ratio in the diet most used was 1.37:1 in grams (molecular ratio—fatty acid to total available glucose=0.48:1). In some cases Langley's original ratio of 1.6:1 was used (molecular ratio—fatty acid:total glucose=0.38:1). In both cases the protein content was about 0.75 to 1 gram per kilo body weight, or rather less in elderly patients. In no case was the gram ratio C:F lower than 1:1. These ratios are much higher than are commonly used, though Sansum[4] uses not only higher C:F ratios, but much higher calorie values with good results.

The advantages claimed are several. First, from the point of view of practicability, it is simple and cheap—its average cost is about 10s. a week—and easy to manage for even the most stupid patient. Furthermore, its generosity in carbohydrate makes it far more tolerable to the patient than the more conventional diet, with a corresponding increase in the probability of its being adhered to.

From the metabolic point of view the advantages are also important. The high carbohydrate:fat ratio gives a much lower ketogenic:antiketogenic ratio than the more usual diets based on the figures of Wilder[5] or Woodyatt.[6] It follows that in any sudden decrease of carbohydrate tolerance—from such a cause as an acute infection, etc.—there will be a larger margin of safety before the onset of acidosis in our diets than in diets based on their figures. Further, should such acidosis occur, the blood sugar content will—on our diets—rise more quickly and to a greater height, warning symptoms will be earlier and more marked, and an increased insulin dose will be safer than when diets of low carbohydrate:fat ratios are used.

It is quite certain that, apart from gross ketonuria, patients taking diets on the older basis are constantly on the verge of a milder acidotic state, with consequent detriment to their general health and diminution in what may be called the "pre-comatose margin of safety," in the event of a further breakdown. It is worthy of note that Campbell,[7] using a molecular ratio fatty acid: glucose :: 1.3:1, finds that it is common in patients whose blood sugar is fully controlled to find acetone in the early morning urine specimen.

A further point is that patients appear to be satisfied

and maintain weight on a surprisingly low calorie intake. This seemed to apply specially to the elderly "hepatic" type, several of whom were able to do their housework on a diet barely sufficient—on the Aub Dubois standard—for their basal metabolic requirements. Not all the elderly cases were subjected to the full dietary régime. In some cases "restriction of bread and potato" was considered sufficient, and in one or two no dietary regulation was imposed.

Insulin.

The use of insulin in the clinic had to be modified by the two considerations of safety and expense. With regard to the first, it is obvious that some few of the patients attending such a clinic as this are quite unfitted to be allowed to administer insulin to themselves, except in cases of absolute necessity. This difficulty was in one or two cases obviated by having the injections given by the patient's own doctor, but this plan is obviously unsatisfactory, and, in general, patients of this type were treated on dietetic lines alone. The expense of insulin therapy was a bar to its use in many cases. Patients who were insured persons were, of course, able to obtain supplies free, but in other cases the supply had often to be limited, or its use entirely discontinued on the grounds of expense. Only in exceptional cases did the hospital supply insulin free of charge.

Subject to these limitations insulin was used freely. Its use was never commenced in the clinic itself, patients being always admitted to the ward if it was considered necessary. Before discharge to the clinic again, patients were made to give their own injections, and thoroughly educated in the use of the syringe, and it was surprising what unpromising patients could be educated to the routine by tactful ward sisters. No trouble was experienced with the injections. The hospital supplied syringes and needles at cost price, and issued spirit for sterilizing as required.

Dosage varied from 6 to 80 units daily, given in two doses before the two principal meals. There were no serious cases of hypoglycaemia. Patients were fully warned of the danger of the condition, and told to carry lumps of sugar in case of accident. Mild hypoglycaemic reactions, lasting a few minutes only, occurred in several patients from time to time, and were considered to be of good prognostic significance. The patients knew what was happening to them, and allowed the reaction to go on to the stage of acute discomfort, if necessary, before taking sugar. It was found that in these cases the insulin dose could be gradually reduced, being kept at each lower level in turn, till the patient complained again of hypoglycaemic reaction, before again reducing the dose (one case reduced from 40 to 8 units daily).

In Table II are given the results of insulin therapy, the standard of increased pancreatic function being reduction of insulin dosage without detriment to the blood sugar. The lack of improvement in cases in Groups II and III is probably due to the fact that no serious attempt was made to bring their blood sugar to normal, consequently "pancreatic rest" was never obtained. Of the two patients in Group I whose pancreatic function decreased, one has a surgical affection—probably tubercle—of the kidney, for which he is being admitted for surgical investigation, etc.; the other is a woman who has several times been convicted of dietary "sprees."

TABLE II.—*Results of Insulin Therapy.*

Group.	Number Taking Insulin.	Pancreatic Function.			Weight.		
		Increased.	Maintained.	Decreased.	Gained.	Maintained.	Lost.
I.	16	7	7	2	11	3	2
II.	1	0	1	0	1	0	0
III.	3	0	3	0	1	2	0

Conclusions.

The results of the first year's working of the clinic were considered good, and showed a marked improvement over the results obtained for the period during which such cases were treated in the general out-patient department. The credit for this seems to be due to careful supervision acting partly as a check on the dietary régime, etc., and partly as an early warning of any trouble commencing.

The diet employed seems to have had a good effect, and its simplicity and palatability are probably largely responsible for the small number of failures to adhere to it.

Of the 44 cases in Groups I, II, and III dealt with in Table I, two—both diabetes mellitus—refused treatment after a week or so. The remaining 42 are dealt with in Table III.

TABLE III.

Group.	Improved.	Condition Maintained.	Worse.
I.	8	7	3
II.	2	11	1
III.	1	7	2

The standards by which progress has been judged in this table are: weight and blood sugar level, and in insulin cases decreased dosage required. No case has been considered "improved" or "maintained" unless the blood sugar was lowered or remained at its original level respectively. The larger number of good results in Group I is greatly due to the fact that in Groups II and III we were satisfied with maintenance of weight and blood sugar level, whilst in Group I we were much more strict, and made every effort to keep the blood sugar down and to recover pancreatic function. Of the three cases in this group who had deteriorated at the time of review, two had been convicted of dietary indiscretions on a large scale, whilst the third is the renal subject referred to in a previous paragraph.

The method of handling these cases described needed no extra staff and no elaborate biochemical work, whilst the results obtained seemed more than to compensate for the extra trouble involved. It is hoped next year to improve the department in several respects, notably in the earlier and more complete investigation of cases in Groups II and III.

My thanks are due to the honorary physicians of this hospital for allowing me to treat these cases, and for the courtesy and kindness I have always received from them; also to Dr. W. B. Roantree, late house-physician to this hospital, for his efficient and enthusiastic help.

REFERENCES.

[1] Maclean, H.: *Lancet*, June 12th, 1926, 1129-33. [2] Langley, G. J., and Porter, E.: Ibid., November 6th, 1926, p. 947. [3] Langley, G. J.: *Clin. Journ.*, 1927, lvi, 13, 149 et seq. [4] Sansum, Blatherwick and Bowden: *Journ. Amer. Med. Assoc.*, lxxxvi, 3, January 16th, 1926. [5] Wilder, R. M.: Ibid., 1922, 78, 1878. [6] Woodyatt, R.: *Arch. Int. Med.*, 1921, xxviii, 125. [7] Campbell and McLeod: *Insulin*, Medicine Monographs, vol. 6.

A SEVERE CASE OF HYPOGLYCAEMIA.

BY

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HYPOGLYCAEMIA is almost always preceded for a short period by highly suggestive symptoms of its onset. The following case is an exception.

H. B., aged 16, was sent into hospital on February 1st, 1927. He had been ailing for a month with loss of appetite, thirst, and loss of weight. When seen by Dr. Sydney Scott on January 22nd he complained of a nasty taste, his tongue was dirty, and throat sore, but he looked well. On January 31st he complained greatly of thirst, and the urine was found to be full of sugar. Two days later he had changed greatly for the worse; he was much emaciated, somnolent, and had air-hunger. The house reeked with the smell of acetone.

On admission he was very drowsy, the tongue dry and furred, breath heavy with acetone, body extremely emaciated and shrunken, eyeballs very soft. The urine was loaded with sugar, diacetic acid, and acetone, and the reaction was very acid. Respiration was rapid and deep, the pulse rapid, small, and feeble; the temperature was subnormal. No septic focus could be found. The onset of coma seemed imminent.

He was given 40 units of insulin hypodermically, with 40 grams of glucose and 8 grams of sodium bicarbonate by the mouth. He drank copiously of water and black coffee. The bowels were moved by an enema.

He was given 20 units of insulin with glucose and bicarbonate every two hours for the next twenty hours—in all 240 units; the urine, examined every two hours, contained much sugar; frequent blood sugar estimations could not be made. His general condition was improving, respiration was less rapid, the pulse stronger, and he was less drowsy.

Insulin was increased to 30 units and given with glucose and bicarbonate every two hours for the next twelve hours; the urine

became alkaline and after thirty-two hours' treatment was free from sugar.

Insulin was then omitted for twelve hours, but sugar reappeared; after 10 units there was still much sugar, and 30 units were then given every two and a half hours for the next twelve hours, when he again became almost sugar-free; insulin was reduced to 20 units every two hours for the next twelve hours, when he became sugar-free. The insulin was again reduced to 10 units every two hours for the next sixteen hours; in the first eight hours there was a trace of sugar, but none in the last eight hours. The continuance of insulin so frequently after the disappearance of sugar was due to a misunderstanding. At the end of seventy-eight hours he had received 730 units of insulin with glucose. He was no longer drowsy, his pulse was good, and respirations were normal. He had taken some protein food and said he felt well.

On February 4th, seventy-eight hours after admission, he had been reading the paper when he suddenly began to "look strange"; the house-surgeon, Dr. Durden Smith, found him lying on his back, his colour good, eyes closed, and pulse full and slow; he did not answer nor show any sign of consciousness. Suddenly he uttered a long cry, the face twitched, and spasms began round the mouth, spreading to the other facial muscles; there was marked nystagmus to the right. The spasms spread to the arms and finally became general, ending in complete tonus and opisthotonos. He stopped breathing, frothed at the mouth, and became very blue; the tonus then relaxed, and the pulse became feebler. Artificial respiration was resorted to and maintained for ten minutes; 2 ounces of urine were drawn off and found to be sugar-free. A sterile solution of glucose (15 grams in 100 c.cm.) was run into the median basilic vein. After this he breathed naturally and spasm ceased. He was still deeply unconscious, and 15 grams more of glucose were run in. He regained consciousness rapidly, and, when asked how he was, replied that he was all right, as if surprised at the inquiry. No further convulsions occurred. He remembered nothing of these events and denied having any premonitory symptoms whatever. Sepsis developed in the arm.

This severe condition of hypoglycaemia and its treatment, combined with the sepsis, completely upset his sugar tolerance. It took a week's careful treatment to get his urine free from sugar and ketone bodies; 10 units of insulin had usually to be given every two hours, but sometimes 30. Eventually he went out of hospital sugar-free without insulin on a diet of 9 lines of Dr. Lawrence's "line ration" scheme, gaining weight and feeling well.

The chief points of interest in this case are:

The rapid progress of the disease in the last few days before his admission, with no discoverable cause.

The hypoglycaemia, due undoubtedly to the error in administering insulin in repeated doses for so long after the urine was sugar-free, followed with dramatic suddenness by convulsions, coma, and collapse.

The rapid and effective cure of this condition by the application at once of the correct treatment.

The difficulty of establishing sugar tolerance again, which was probably in large measure due to the sepsis.

The satisfactory condition of the patient when he left the hospital.

RUPTURE OF THE HEART:

*AN ANALYSIS OF EIGHTEEN CASES.**

BY

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EMOTIONAL strain, such as anger, sorrow, or disappointment, has been known to cause rupture of the heart, but a critical analysis of the following eighteen cases reduces the exciting cause to a more material basis, for, of the eighteen cases here presented, in only four could the exciting cause be called emotional.

The results of the following analyses are unexpected, for certainly the emotions of everyday life provide by far the greatest strains to which the cardio-vascular system is subjected.

Many years ago a man presented himself for treatment in the out-patient department of a hospital in London complaining of shortness of breath and pain in the chest on exertion. A physician, after a somewhat lengthy examination, electrified his audience by saying that he thought the man had an aneurysm of the left ventricle; this was long before the days of *x* rays. Treatment was prescribed, and the man was leaving the hospital when at the front gate he suddenly collapsed. At the necropsy a tear in the left ventricle was found, secondary to a gummatous infiltration.

A male guinea-pig had been kept for some months in a small cage in a room by itself. One day an attendant placed the cage in another laboratory near a cage containing a female guinea-pig; the male appeared overcome by excitement, gave a chirp and fell over dead. The heart was found to have ruptured.

An old lady had a small dog, which she took for a walk. The dog strayed into the road, and the old lady became exceedingly worried, but finally rescued it. She felt faint and ill with excitement, but walked home; she complained of pain in her chest, went to bed, and declined any dinner. Next day she did not appear for breakfast, and was found lying dead on the floor. Her heart was found to have ruptured, and there were several tears in the ventricular wall, containing clot; she had apparently lived for some hours after the rupture.

A man who had spent the evening at his club, where he appeared to be in his usual health, went out into the cold air and started to walk home. He suddenly collapsed, became cold and pale, and practically pulseless. He was taken home, and his doctor, on arrival, thought the man was dying, and said that the case looked "like a ruptured extrauterine"; he considered the man so nearly dead that he did not think anything could be done for him. Next day, however, the man was much better, and steadily improved. On examination the cardiac dullness was found to be increased, the heart sounds were exceedingly feeble—almost inaudible—and the base of one lung was dull. The man admitted that he had had a cough for some days before, and had been short of breath. I came to the conclusion that he had an effusion into the pleura, and possibly into the pericardium. It was fully realized at the time that this theory of pleurisy did not explain the sudden collapse in the street, and the question of a ruptured aneurysm was considered. The pleura was tapped, and about a quart of blood-stained fluid was withdrawn; the heart sounds were still distant and the base of the lungs dull, but the man seemed easier. The following day the pleura was again full; the man, however, was improving, so nothing further was done. He appeared to progress for over a fortnight, when, on sitting up and attempting to sing, he fell back dead. He was found to have a small tear in the upper part of the left ventricle, close to the aorta; this had allowed blood to leak into the pericardium, and also into the pleura.

In this series of cases, encountered during a period of many years, there are points of special interest.

The first case shows the accuracy with which a diagnosis could be made by a careful, painstaking, and skilful physician.

The case (of the guinea-pig) appears particularly interesting because it suggests the possibility of the rupture of a healthy heart, at any rate in an animal out of condition and under a violent emotional strain.

The last two cases are of interest because they show that rupture may be associated with pain, and that it may be possible for people to live for a considerable time after an extensive rupture has actually occurred.

The following short histories, with the *post-mortem* findings, relate to a further series of fourteen cases with which we have come in contact.

A man, aged 75, had malaria in South Africa in 1903. One morning in January, 1924, he had breakfast in bed and slept afterwards. Shortly after noon he was found fully dressed lying dead on the floor. The heart weighed 17½ oz., and was soft, pale, and fatty. There was a tear 1½ in. long in the anterior wall of the left ventricle. The aorta was markedly atheromatous and the coronary arteries were calcified.

A woman, aged 74, gave a history of "heart trouble" for fifteen months. She had once "collapsed" while shopping, and about two months later she collapsed again and had to sit on the stairs all night (alone in the house). She was seen, apparently well, in bed one afternoon, but was found dead in bed the same night, lying in a natural position with the clothes undisturbed. The heart muscle was dotted with fibrous patches. At the apex of the right ventricle the wall was very thin and there was a deposit of *ante-mortem* clot. The wall had ruptured in this position. The coronary arteries were calcified.

A man, aged 71, previously in good health, contracted a cold and at times during the following three weeks suffered from giddiness without fainting, and from bronchitis during the last week. He had breakfast one morning, felt much better, and said he would go for a walk; while walking through the yard he staggered and fell. There was a heart tear in the posterior wall of the left ventricle. The coronaries were calcified and almost obliterated. The muscle was stippled with white patches.

A clerk, aged 59, who had been fairly healthy a few days before his death, complained of acute pains in the chest and back. On the day of his death he worked without complaint; about 5.30 p.m. he went to the lavatory and was found there dead about ten minutes later, huddled on floor, face downwards. The heart was not enlarged; there was a ragged tear in the anterior wall of

* A demonstration of specimens from this series of cases was given at the Annual Meeting at Nottingham on July 23rd, 1926.

the left ventricle two-thirds of the way down. The muscle was pale and soft. The left coronary was blocked close to its origin by a clot due to atheroma. The aorta was healthy.

An army pensioner, aged 75, who had had good health previously, complained of pains in the chest one day, but did not see a doctor. The next day he was better, and continued his work as doorkeeper. Three days later he complained of pain in the chest and was later found dead in a lavatory. There was rupture of the anterior wall of the left ventricle. The left coronary artery was completely blocked just above the rupture. Both coronaries were calcified, and the muscle was pale and soft.

A man, aged 71, apart from weakness owing to age, was healthy. He was found lying dead face downwards. The heart showed a small rupture of the anterior wall of the left ventricle; the muscle was very soft and the coronary artery was very calcified.

A man, aged 63, who had complained of pains in the chest for a considerable time, was found lying dead in bed. The heart weighed 19 oz., and was pale, soft, and flabby. There was a tear in the anterior wall of the left ventricle. The left coronary artery was calcified and blocked by atheroma just above the tear. The aorta was atheromatous.

A man, aged 69, had had fairly good health, except for gout and ulcerated legs. One morning he was heard by his landlady moving about his room. She later heard a thud and found him lying on the floor, partly dressed, and unconscious. The fibrosed heart weighed 17 oz., and there was a rupture in the anterior wall of the left ventricle. The coronaries were sclerosed, but no obliteration was found.

A retired railway guard, aged 69, had had good health except for a "seizure" four years previously, when the mouth was drawn to one side (cerebral vessels sclerosed). He had had slight indigestion since. On returning home one evening in June he complained of the heat and of pain in the side. A quarter of an hour later he attempted to get up from his chair and collapsed. The heart weighed 22 oz., and there was a rupture 1 in. long in the anterior wall of the right ventricle. The coronaries were sclerosed and the aorta was atheromatous.

A man, aged 86, previously healthy, complained of "a lump in the chest" and flatulence. A week later he got up at 6 a.m. to make tea, drank a cup, returned to the bedroom, told his wife he felt too ill to give her a cup, and lay down. He had attacks of spasms, and at 7.30 suddenly got off the bed and fell down unconscious. The heart, which weighed 22 oz., was very soft and pale. The coronaries were sclerosed, the aorta very atheromatous with diffuse aneurysmal dilatation of the thoracic portion. There was a rupture in the anterior wall of the left ventricle.

A man, aged 72, formerly a sawyer, had had bronchitis for some years, and more recently complained of pains in the chest. Apparently all right at 8 a.m., he was found lying on the floor dead about 10.30 a.m. The heart weighed 18 oz. The left ventricle was hypertrophied, and had a tear 1 in. long in the posterior wall. The coronaries were sclerosed, but the aorta was healthy.

A locksmith, aged 72, had suffered from cough and pains in the chest for some time. One day he complained of pains in the chest and left arm. About 3 p.m. he went to the lavatory; at 3.15 groans were heard, and he was found huddled on the floor. He died about two hours later. The heart weighed 15 oz. There was a rupture of the posterior wall of the left ventricle, due to blocking of a branch of the left coronary artery, which was sclerosed.

A woman, aged 65, had complained for some time of not feeling well, and had rested on her bed a good deal. At 6 o'clock one morning she had a cup of tea, got up at 7, and went down twenty-four stairs. She was found collapsed on the ground floor landing. A tear 1½ in. long was found in the anterior wall of the left ventricle, which was hypertrophied; the muscle was soft and the coronaries were sclerosed.

A man, aged 48, had attacks of indigestion at times. After a good breakfast one morning he went to lie down, and was found unconscious at midday. The heart weighed 18 oz. The coronaries were sclerosed, the aorta atheromatous, and there was a large infarct.

Twelve of these cases were in men and two in women; the average age of the men was 69 and of the women 69.5. Two of these patients died in bed, three died after definite exertion, while nine died after no apparent special effort.

As regards the site of the rupture, in eight cases there was rupture of the anterior wall of the left ventricle, in three cases the rupture was in the posterior wall of the left ventricle, while in two cases the right ventricle was ruptured. In every case the coronary arteries were calcified, while in four cases a definite obstruction existed; in one case *ante-mortem* clot was present.

It is particularly interesting to note that there was no history of previous heart disease in the men, except pains in the chest in five cases, two of which dated back only three and six days respectively.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF GUMMATOUS COLITIS.

THE attitude of the medical profession for many years towards syphilis of the large intestine was that the syphilitic was one of the commonest forms of stricture; but now opinion has swung round almost entirely to the opposite view.

Syphilitic strictures of the colon do occur, but they are exceedingly rare, and there are few authentic cases on record. It has been pointed out repeatedly that a localized chronic inflammatory lesion of the gut is not necessarily syphilitic because the patient had that disease—that is, because he showed a positive Wassermann reaction. The association, too, of cancer of the rectum and syphilis is by no means infrequent, and it is difficult, if not impossible in some cases, to differentiate between the two when they occur as isolated lesions. Spirochaetes indistinguishable from the *Treponema pallidum* are occasionally found in the stools in healthy (unsyphilitic) patients, but it is only when they are demonstrated microscopically in the walls of an inflamed gut that their identity with the organisms of syphilis can be clearly established.

In the case recorded here the patient gave an unequivocal history of syphilis; the Wassermann reaction was strongly positive, and a localized inflammatory lesion of the colon was found presenting all the microscopical characteristics (and they are few) of a diffuse gumma of the gut. Spirochaetes, however, were not demonstrated in the walls of the colon.

The patient, a woman aged 46, complained of abdominal pain, intractable diarrhoea, and loss of weight. The abdomen was slightly distended, and a hard fixed mass was felt on the left side at the level of the umbilicus. The liver and spleen were not enlarged, and there was no ascites. Rectal and sigmoidoscopic examinations were negative, but skiagrams after a barium enema showed an organic stricture of the descending colon. She had syphilis at the age of 28, and two miscarriages subsequently. When she was 34 she suffered from extensive ulceration of both legs and received her first course of treatment. A blood count showed secondary anaemia and lymphocytosis, and the Wassermann reaction was positive to the extent of four pluses. A diagnosis of organic stricture (? carcinoma) of the descending colon was made, and the patient was admitted to hospital with view to operation. After admission she lost weight rapidly, and had from ten to twenty motions a day. They were liquid, very offensive, and contained large quantities of dark brown blood-stained clumps of gummy material.

As a short intensive course of antisyphilitic treatment produced no amelioration of the symptoms exploratory coeliotomy was performed. The abdomen was opened through a left paramedian incision, and the abdominal organs were then systematically examined. The stomach, liver, and spleen were normal. The stricture occupied the middle third of the descending colon, and in many ways resembled a colloid growth. It was 5½ inches in length, and varied from three-quarters of an inch to 3 inches in thickness. It was firmly fixed to the posterior abdominal wall by a broad base. The surface of the tumour was of a dark grey colour and thrown into a series of irregular folds and bosses. The large intestine immediately above and below the strictured area presented a healthy appearance.

The whole of the descending colon was mobilized and delivered through the wound, a wide resection carried out, and axial anastomosis, with caecostomy, performed.

She recovered well from the operation, but one month later, on the date arranged for her discharge from hospital, she developed pneumonia and rapidly succumbed. Consent for a *post-mortem* examination could not be obtained.

Description of Part Excised.

Dr. A. K. Gordon cut sections of the 10 inches of gut removed, and reported that macroscopically the middle 5 inches was thickened and fibrotic.

The lumen could not admit the tip of the little finger. The interior was verrucose, and the mucous lining was absent; there was no obvious ulceration; and sessile papules 2 to 10 mm. in diameter were studded over the surface. Microscopically, in most of the exudate there were masses of plasma cells, and giant cells of irregular distribution were found. Secondary coccal infection and fibrosis were also present.

There was no evidence of sarcoma, carcinoma, diverticulitis, or tubercle, and Dr. Gordon was convinced that the condition was syphilitic.

London, W.1. RODNEY MAINGOT, F.R.C.S.

ILEUS DUE TO IMPACTION OF A FIG.

THE following case seems to be of sufficient interest to be worthy of recording.

A man, aged 67, was admitted to Greenbank General Hospital, Darlington, on March 17th, 1927, suffering from symptoms of acute intestinal obstruction, which had come on at 2 o'clock that morning. He had been operated on seven years previously for symptoms of acute intestinal obstruction, but nothing was found. He attributed his present condition to some figs consumed at dinner the day previously; he was edentulous. He suffered from an old-standing left inguinal hernia. When examined at 11 a.m., he was cold and collapsed. The abdomen was moderately distended, and pain in the lower part was complained of. Some dullness on percussion was noticed in the mid-line below the umbilicus, and seemed to extend over towards the site of the hernia. It was accompanied by severe colicky pain and vomiting of bilious material. There were no signs of obstruction at the site of the hernia. Ammonium chloride solution (3 drachms to 5 oz. of water) was ordered to be given by the rectum, but, in view of his collapsed condition, the stomach was not washed out.

Under general anaesthesia the abdomen was opened below the umbilicus and the hernial orifice examined. The small bowel appeared moderately distended Without much searching a movable soft mass was felt in the pelvis; this, when brought up, turned out to be a soft pultaceous mass in the ileum, which was dilated above and collapsed below. Incision along the antimesenteric border revealed a whole fig to be the cause of the obstruction, without any maceration or signs of having been masticated, and just as complete as when it came out of the pot. The bowel was sutured in the transverse axis with two rows of sutures and the abdomen closed.

The patient made a rapid and uninterrupted recovery.

R. CHALMERS, M.D., F.R.C.S.Ed.,
Honorary Assistant Surgeon, Greenbank Hospital, Darlington.

THE DIAGNOSIS OF GANGRENE OF THE SMALL INTESTINE.

THE following case is recorded because it presents one or two unusual features, and I should like to know whether such an association of contradictory signs has any diagnostic significance.

A strong, muscular blacksmith, aged 54, had for supper some "black puddings," followed by a "gill of beer," after which he retired to bed. Four hours later he was suddenly seized with severe cramp-like abdominal pains which intermittently increased in severity but never entirely disappeared. Nausea had been present from the first, and was soon followed by persistent vomiting. Flatus was passed occasionally. The next morning I found him restlessly pacing the room, pressing his hands tightly into the pit of the stomach. He had just vomited and the vomit was definitely faecal. There was general laxity of the abdomen with no localized pain, tenderness, distension, or signs of hernia. A rectal examination was negative. The tongue was rather dry and had thick white fur on the dorsum. The lungs were healthy, but the heart sounds were muffled, and had no distinct bruits. The pupil reactions and deep tendon reflexes were normal. Puzzled by the combination of faecal vomiting, indicating bowel obstruction, and continuous passage of flatus, indicating bowel patency, I made a tentative diagnosis of partial intestinal obstruction, thinking that possibly the indigestible bolus of "black pudding" had come up against a malignant growth near the beginning of the large intestine. A large enema produced a good result of normal appearance. The pain and vomiting, however, became steadily more severe, though the general condition remained good. I sent him into hospital, where the vomiting diminished; morphine was given and he became more comfortable. He passed a good night, and the next morning he was free from pain and vomiting. He had passed flatus during the night. Towards evening his condition became rapidly worse; the temperature rose to 103°, and Mr. Basil Hughes decided to explore the abdomen. On opening it much foul-smelling fluid gushed out and an almost complete gangrene of the small gut was found, from blockage of the superior mesenteric artery. The patient died next day.

This case has several features of clinical interest apart from the mere fact of its rarity. The combination of faecal vomiting with persistent passage of flatus must surely be unique. The absence of distension is explained by this removal of gas from the bowel. The cessation of the vomiting was, I think, coincident with paralysis of the gut, which had been deprived of blood for about twenty hours. The rapid deterioration after this time would indicate toxic absorption, the vitality of the gut having been destroyed.

To my mind, the combination of persistent faecal vomiting with the continued passage of flatus is so rare as to be pathognomonic of the condition of intestinal stasis due to gangrene of the small bowel following on deprivation of blood supply.

Bradford. B. W. RYCROFT, M.B., Ch.B.

Reports of Societies.

BRONCHIECTASIS.

AT a meeting of the Royal Medico-Chirurgical Society of Glasgow on April 8th, the President, Dr. COWAN, in the chair, Dr. JAMES ADAM read a paper on bronchiectasis of inhalatory origin.

Dr. James Adam said that for diagnostic purposes he preferred to inject lipiodol through the glottis after passing a gum elastic catheter between the cords with the aid of a Jackson laryngoscope. In older children and adults the patient sat and the larynx was treated with cocaine; in young children no anaesthetic was necessary and the patient was supine. After dealing with bronchiectasis and pulmonary abscess following missed foreign body or the operation for tonsils and adenoids, and insisting on the need of a careful inquiry as to the history and of *x*-ray examination before and after lipiodol injection, Dr. Adam described nine cases of bronchiectasis associated with nasal sinusitis and four post-pneumonic cases. The former were entirely or mainly in the right lung. Nasal sinusitis as a cause of bronchiectasis had been overlooked in this country, though not in America; such cases were preventable by prompt nasal investigation and treatment. He also suggested the possibility of the fatal termination of bronchiectasis by brain abscess being due to metastasis from the nose as well as from the lung, and quoted statistics from Eagleton in support. He then gave the results of treatment by nasal operation, bronchoscopic suction and lavage, and by two-hourly inversion. Suction was important at the beginning of treatment; the value of lavage was, at any rate in many cases, open to doubt. Of the value of systematic inversion there was no question.

Dr. LEONARD FINDLAY referred to the condition as met with during childhood. He said that it should be remembered that in any large series of examples of chronic pneumonia and bronchiectasis the majority of the patients were children, or had apparently developed the disease during childhood. He drew attention to the varying symptomatology of the disease, and described illustrative cases in which the diagnosis had been obtained either by the intratracheal injection of lipiodol or at the necropsy. His experience agreed with that of Delille—that there were three types of cases: (1) cases of bronchiectasis with typical signs and symptoms, (2) cases with suggestive symptoms but no bronchiectasis, and (3) cases of bronchiectasis with neither signs nor symptoms. For the diagnosis of the presence and extent of bronchiectasis the introduction of lipiodol was essential. He believed that in the diagnosis of pulmonary disease the use of lipiodol was the greatest advance since the introduction of radiology. He analysed the signs and symptoms of 25 cases in which the diagnosis was confirmed either during life with lipiodol or at necropsy. The children were, as a rule, undersized, but well nourished. Clubbing of the fingers was present in 11 cases, and was related more to the extent of the disease than to its duration. Cough was present in 24 and absent in one. Expectoration was present in 17 cases and absent in 6; in all of these 6 the disease was of less than eighteen months' duration. In only 3 cases was the sputum fetid. Amphoric breathing was audible in 10 cases and whispered pectoriloquy in 7. As in all previously recorded series the left lung was most frequently the seat of the disease. In 16 cases the left lung alone was involved, in 4 the right lung alone, and in 5 both lungs were attacked. In no case was the apex alone the seat of the disease. Dr. Findlay attributed the disease entirely to chronic pneumonia, as had been suggested by Corrigan, though pleural adhesions, first incriminated by Hamilton, also played a part. In Dr. Findlay's *post-mortem* material both chronic pneumonia and pleural adhesions had invariably been present. In his series of cases the condition could be traced in all but three to some acute pulmonary disease, primary bronchopneumonia, or bronchopneumonia secondary to the infectious fevers or pleurisy. In three cases the condition set in insidiously.

Dr. STANLEY GRAHAM described the technique of the intrapulmonary injection of lipiodol. He said that in the adult the use of the laryngeal tube might be comparatively simple, but in children it was undoubtedly not the method of choice because the glottis was small and it was very difficult to anaesthetize the pharynx and larynx sufficiently. In adults the pictures were scarcely as good as those obtained when the lipiodol was introduced through the crico-thyroid membrane. In children a general anaesthetic was advisable for psychic reasons, apart from the physical discomfort of the operation. In older children it was quite possible, by means of local anaesthesia, to insert the needle into the trachea through the crico-thyroid membrane, but the parts were very soft and it was difficult to prevent movement or swallowing. The needle found most satisfactory was curved and mounted with a flange like a tracheotomy tube. The stilette might project beyond the point of the needle when it had a blunt end, as in the case of an ordinary trocar and cannula, but the form employed in lumbar puncture needles was better: the needle was sharpened at an angle of 45 degrees and the stilette similarly angled to become flush with the needle point. The needle should be large enough to permit of the oil being forced through the lumen. The lipiodol should be warmed to body temperature to facilitate its flow through the needle. It was advisable to use a syringe which could be heated, and since great pressure was often needed, a device whereby the piston could be screwed home was convenient. Before commencing the anaesthetic the bronchiectatic cavities should be emptied as completely as possible by inverting the child and inducing him to cough. This permitted the cavities to fill more readily and completely, thus producing a better and more clear-cut picture, and the coughing up of large amounts of sputum during the operation was avoided. When the child was completely anaesthetized the thyroid cartilage was grasped between finger and thumb of the left hand, the crico-thyroid membrane was identified, and the needle was inserted in a downward and backward direction. With a large needle the withdrawal of the stilette showed if it was in the trachea by the rush of air in and out. If the needle was smaller the lumen became very readily blocked with the purulent secretion in the trachea so that no air could pass. By attaching a syringe and applying suction air could be readily withdrawn and also introduced if the needle was in the lumen of the trachea. After making sure that the needle was in the trachea, 1 to 2 c.cm. of 4 per cent. novocain was introduced to lessen the tendency to cough. Then the syringe filled with lipiodol (15 to 18 c.cm.) was attached and the oil slowly injected, its entrance being aided by elevating the shoulders slightly. At least 18 c.cm. was necessary, and often better results were obtained by giving 36 c.cm. He did not think it necessary to turn the child on to the side to facilitate the flow into one or other lung, since the bronchiectatic portions of the lung seemed to have an affinity for the oil, perhaps due to the diminished expiratory efforts and resistance in these bronchi. Immediately after the injection was completed an *x*-ray photograph of the chest was taken; in the case of children, an instantaneous apparatus was essential for the production of sharp pictures. As a rule, some of the lipiodol was coughed up, swallowed, and entered the stomach, but sufficient remained in the bronchial tree to demonstrate any abnormality. The method was practically free from danger, and only two accidents had been encountered by Dr. Graham. In one of the earlier cases some of the lipiodol was injected into the surrounding tissues and could be seen on *x*-ray examination as an opaque irregular mass in the upper part of the chest. In the other case a boy, aged 3, had a violent fit of coughing on recovering from the anaesthetic and a severe subcutaneous emphysema was produced. This he had found could be controlled to a certain extent by a hypodermic injection of morphine. In neither case did the patient receive any permanent injury. The subcutaneous emphysema cleared up very quickly, and in the first case the oil would presumably be absorbed in time and there was no present inconvenience. Iodism had not been observed following the use of lipiodol; as much as 30 to 38 c.cm. had been given to a child with no untoward effects. Presumably the majority of it was coughed up, and, at any rate, the absorption of the oil from the site of the bronchiectasis must be very greatly diminished.

Dr. J. B. MACKENZIE ANDERSON said that his experience of bronchiectasis had been mostly confined to adult cases, but he agreed with Dr. Findlay that the great majority of cases gave a long history and probably started early. Most of his cases had been males, the proportion being roughly five to one. An early history was usually obtained of tuberculosis, pneumonia, pleurisy, or empyema. Of two cases in elderly people in one it was associated with a neoplasm and in the other with an aneurysm. He thought that in most cases the clinical picture was fairly typical and the use of lipiodol was unnecessary.

Dr. W. S. SYME thought that there were two distinct types of bronchiectasis: (1) Those due to the inhalation of a foreign body. In such cases there was usually one single large cavity formed, he had no doubt, by ulceration of the wall of a bronchus, as was evidenced by the presence of granulations. For these the appropriate treatment was lavage of the cavity after removal of the foreign body, where it could be found. In some of these cases he had no doubt the foreign body was derived from the purulent discharge of nasal accessory sinus disease. He had seen patients so affected very materially improved by this treatment. (2) Cases referred by physicians. In these cases there were usually a number of small cavities. These were not suitable for lavage. He thought that the theory mentioned by Dr. Findlay as to the etiology of such cases was correct. Dr. Syme was convinced that sinus disease was very often overlooked, especially in children, in whom it was much more frequent than was generally supposed. It should not be too readily concluded that the discharge in a child's nose was due to adenoids. A careful examination, if necessary by proof-puncture, which was an easy procedure even in quite young children, would often elicit the presence of antral suppuration.

APYREXIAL PERIOD IN BACTERIAL ENDOCARDITIS.

AT a meeting of the Section of Medicine of the Royal Academy of Medicine in Ireland, on April 8th, the President, Dr. GEORGE E. NESBITT, in the chair, Dr. L. ABRAHAMSON showed a case of subacute bacterial endocarditis in which there had been a prolonged period of apyrexia.

Dr. L. Abrahamson said that a girl, aged 21, had been admitted to Mercer's Hospital complaining of swollen ankles and pains in the elbows. She stated that the condition had started three years previously with pain and swelling of the legs and ankles; since then attacks had recurred periodically. Examination showed anaemia, carious teeth, some clubbing of the fingers, purpuric spots on the legs, a palpable spleen, a loud systolic heart murmur, and tenderness of the legs. A diagnosis was made of subacute bacterial endocarditis, and the *Streptococcus viridans* was recovered from the blood. She was treated by removal of septic teeth and injections of cacodylate of soda. After nearly four months she left the hospital and since then had been relatively well, apart from recurrent attacks of purpura, and, on two occasions, swelling of the ankles. During her stay in hospital there was no pyrexia. Dr. Abrahamson added that absence of pyrexia for a time was not unusual in these cases, but he regarded the finding of the streptococcus in the blood during the apyrexial period as distinctly uncommon, and, in his experience, unique.

The PRESIDENT thought that the virulence of the organism varied greatly in different patients. In his cases he almost invariably got negative blood cultures. In his experience the disease was uncommon in Ireland, and much more prevalent in England and abroad.

Professor Bigger said that in blood cultures contamination was likely to occur from time to time. It did not always follow that when streptococci were present in the blood culture they had also been present in the blood. He

and others had recently investigated the condition of the skin at the elbow, where the blood culture was generally taken, and had found in some cases *Streptococcus viridans* present. The finding of this organism generally meant that it was present in the blood, but this was not always so.

Dr. SPEARS mentioned the case of a boy who was admitted to hospital in 1921 with swellings of the joints. Nothing was found and his temperature never rose above 100°. He was discharged, but came back in 1922, remained in hospital for seven months, and died in May, 1923. During this time a streptococcus was isolated from a blood culture, but he was always apyrexial. Two other patients at the beginning had complained of swelling of the joints, which he had taken to be arthritic. In cases of arthritis streptococci sometimes circulated in the blood. He thought that this disease should not be called subacute endocarditis, but chronic endocarditis.

Dr. J. R. ROWLETTE said that some years ago bacterial endocarditis was always considered a progressive disease which terminated in a fairly short time. Dr. Abrahamson's case, however, seemed to be running a chronic course. He referred to a patient whom he had treated in 1922 for haematuria, purpura, and a sharp attack of fever; *Streptococcus viridans* was found in the blood culture. A vaccine was tried and the patient was found to be extremely sensitive to it. After a year another, but less sharp, attack occurred, and at this time the patient also had a small double effusion and a recurrence of the purpura. In a week, however, the pyrexia had passed off, and except for chronic mitral disease the patient had had no signs since of subacute bacterial endocarditis. Dr. Rowlette thought that in this case the infection was due to an apical dental abscess; a decayed tooth was found and removed. He thought that vaccine treatment should not be omitted in these cases, and that no such gloomy view of the disease need be taken now as was prevalent six or seven years previously.

Dr. L. ABRAHAMSON, replying, said he did not think the finding of *Streptococcus viridans* in the blood was an essential point of the diagnosis of subacute endocarditis in cases where typical symptoms were present. He emphasized the danger of basing a diagnosis on the finding of this organism in the blood stream in cases where symptoms were not present. Transient pyrexial attacks had been described in which the *Streptococcus viridans* was found in the blood, though there was no endocarditis and the patient made a rapid recovery. He thought vaccine treatment worth trial, though he had obtained no beneficial effects from it in other cases of this type.

Bence-Jones Proteinuria.

Dr. G. BOWLEY read a paper upon Bence-Jones proteinuria and demonstrated tests. He said that the term "proteose" was a misnomer, and described the present state of our knowledge regarding Bence-Jones protein. He read notes of a remarkable instance of the abnormality met with in a woman who complained of increasing general weakness, pain in one shoulder, and a sore swollen tongue. Though no definite proof of the existence of myelomata could be found, the *x* rays suggested that there was probably very early myelomatous growth in the bones of the right shoulder girdle and the ribs. The result of kidney-function tests was remarkable, the ability of the kidneys to excrete urea and dye-stuffs being far below normal, while the blood urea was over 200 mg. per 100 c.cm., and yet the patient did not appear to have nephritis. Albuminuria was never found in spite of the continuous excretion of a large amount of Bence-Jones protein, which, as usual, was also present in the blood serum.

Dr. J. SPEARS mentioned a case of Bence-Jones proteinuria which had been under his care, in which the tongue had felt very hard, and was so swollen that the patient could not put it out. At the *post-mortem* examination the knife had cut through the bones and everything else very easily.

Dr. BOWLEY, replying, said that when he first saw the patient and found that her blood urea was over 200 mg. per cent. he thought the case was one of interstitial nephritis. He had only seen a few patients with a blood urea of 200 who had not died of uraemia. In these cases, if the precipitate was watched, it would be seen that it came down very rapidly, much sooner than albumin or globulin would be expected to come down, and in quite a different way from that in cases of albuminuria. In the literature it was reported that when Bence-Jones protein was found in the urine it was also found in the exudates and in the blood. Albumosuria was quite distinct from Bence-Jones proteinuria.

Clinical Cases.

The PRESIDENT showed a case of transposition of the viscera, in which not only the heart, but all the organs were completely transposed.

Dr. J. SPEARS showed a case of diminution of the visual fields of recent onset in a boy aged 9, who had been under his care for some years as a case of infantilism. The perimeter findings suggested pressure upon the optic chiasma. Dr. EUPHRAN MAXWELL demonstrated the charts of the boy's visual fields, and also showed charts from other patients with similar conditions who had been under her care for some years. Dr. W. C. MACFETRIDGE mentioned the case of a patient who had had an abnormal condition of the eyes for some years, and who had then developed other symptoms which had necessitated her going into a general hospital, where pituitary tumour was diagnosed. She did not, however, have an operation, and had apparently been doing quite well. Dr. SPEARS, replying, said that both thyroid extract and pituitary extract had been given to the patient before the impairment of vision had been noticed. The boy had been under medical care for six years, and it was only recently that his sight had got bad. From the point of view of obesity, he did not think that the giving of posterior pituitary extract would be of much use. Dr. MAXWELL, replying, said that there had been no optic neuritis in any of her cases, but there had been optic atrophy.

Dr. L. ABRAHAMSON showed a case of syphilis of the liver and aorta, with obstruction of the inferior vena cava, in a woman, aged 50, who complained of breathlessness on exertion with palpitation, vague pains in the abdomen, and wasting. Her symptoms had started three years previously, and swelling of the legs had been a prominent feature at the beginning. She had been in the habit of taking a moderate amount of alcohol daily. Examination showed a widespread enlargement of veins from the lower part of the chest to the inguinal regions and extending to the back. The circulation was from below upwards. Palpation of the abdomen revealed a smooth enlargement of the liver, but no enlargement of the spleen, nor ascites. The apex beat was forcible and a harsh systolic murmur was heard, maximal in the aortic area and accompanied there by a loud second sound. An *x*-ray examination of the chest showed a greatly enlarged thoracic aorta with a bulge on the left cardiac margin, produced probably by an aneurysm of the descending aorta. The urine contained abundant albumin. Dr. Abrahamson discussed the collateral circulation in this case, and said that in portal obstruction, without ascites, the collateral circulation was found over the upper abdomen, round the umbilicus, and sometimes over the lower chest. When ascites supervened veins enlarged in other regions from pressure on the inferior vena cava. In obstruction of the inferior vena cava the collateral circulation extended from the lower chest to the inguinal regions, and encroached but little on the neighbourhood of the umbilicus. The collateral circulation in his case was clearly of the inferior vena cava type, and as there was no ascites, he held that there was obstruction of the inferior vena cava, probably from pressure of a gumma. The PRESIDENT thought that the condition might be due to a gummatous mass in the lower part of the mediastinum. Dr. A. R. PARSONS attributed the symptoms to obstruction of the inferior vena cava, and said that he had had an almost identical case following typhoid fever. The patient had recovered, but died two years later, and at the necropsy obstruction of the inferior vena cava was found.

Reviews.

PSYCHOPATHOLOGY.

IN a volume entitled *Psychopathology: Its Development and its Place in Medicine*[1] Dr. BERNARD HART includes his Goulstonian Lectures delivered before the Royal College of Physicians of London in 1926; an appendix to the second lecture on "The conception of the subconscious, coconscious, and unconscious"; a paper on "The psychology of rumour"; and one on "The methods of psychotherapy." His aim is to describe the development of psychopathology as a branch of medicine, to measure its achievements, and to consider how far it has succeeded in establishing a secure position within the fold of science. Dr. Hart is eminently fitted to enlighten us in regard to these difficult matters. He is a lucid writer, he has a wide knowledge of his subject on both its practical and theoretical sides, and he is objective in his outlook. Like all his writings on psychopathology, this work is dignified, philosophical, and restrained.

The argument in this volume is based upon the thesis that what are described as unconscious mental processes are not to be regarded as phenomenal facts or as having a real existence; they are purely concepts devised to explain the phenomena of thought and behaviour. The "unconscious," according to this view, is a conceptual abstraction analogous to those of chemistry and physics—such as the atomic theory and the theory of ether—and, like these, its validity must be determined by its ability to satisfy the tests of experience and experiment demanded by the methods of science. Briefly, then, Dr. Hart defends the use of the term "unconscious" on philosophic grounds, and expresses the view that the criticism which has been levelled at the conception of the unconscious and other of Freud's basic assumptions, on the ground that these are impossible entities, is due to a misapprehension of the nature of science and of the psychological method of approach.

On other grounds, however, Dr. Hart finds the Freudian theories open to criticism. He is of the opinion that their real weakness depends upon the imperfections of the method of psycho-analysis as a weapon of investigation, whereby the conceptions rest on inferred facts rather than on actual objective facts. He recognizes that this weakness is in some degree inherent in all psychological research, but holds that it is graver here, because the deviation from observed facts to inferred facts is exceptionally great, and introduces numerous potentialities of distortion. For this reason he suggests that every possible means of investigation should be directed to the method of psycho-analysis with a view to examining its validity and eliminating or controlling the sources of error which seem to be inherent in it. He observes, however, that many of the simpler Freudian conceptions are based on inductions in which both the measure of inference and the possibility of distortion by the method of investigation are comparatively small; and, further, that there are sources of confirmation outside the method of psycho-analysis which at any rate give some support to the conceptions. He draws the final conclusion that, although the theories of Freud do not attain the standard demanded by the canons of science, some of his conceptions approximate very nearly to that standard, and perhaps as nearly as any psychological conception can approach.

We think it unlikely that the psycho-analyst would accept the view that the "unconscious" is purely conceptual in character. He would no doubt maintain that unconscious mental processes were phenomenal—that is to say, that they had a real existence. There is something to be said in favour of such a view. Apart from any question of Freud's particular formulation as to the nature of the "unconscious," it is certainly a fact that both animal and human behaviour are determined in some measure by internal processes the existence of which is not consciously appreciated. Such causal processes can scarcely be purely conceptual; they must be actual occurrences. Consciousness is not, in fact, the essence of life and mind; "unconscious desire" is manifested throughout the whole of animal life, the subjective terminology being no more than a convenient mode of expressing the fact that physiological occurrences within the organism impel it to behave in a particular way. Thus the notion of the "unconscious" leads us back to the fundamentals of organic life.

This book thoroughly merits the attention of all those who are interested in the problems of life and mind.

[1] *Psychopathology: Its Development and its Place in Medicine.* By Bernard Hart, M.D., F.R.C.P. London: Cambridge University Press. 1927. (Demy 8vo, pp. v + 153. 7s. 6d. net.)

PATHOGENIC MICRO-ORGANISMS.

THE first three fasciculi of the third edition of KOLLE and WASSERMANN'S *Handbuch* of pathogenic micro-organisms,[2] under the editorship of W. KOLLE, R. KRAUS, and P. UHLENHUTH, have appeared recently.

Fasciculus 1, forming the first part of Volume I, consists of 160 pages of text and six plates, two of which are coloured. This fasciculus is divided into two parts. In the first (pages 1-30) R. Abel describes, with particular reference to the earlier hypotheses, the development of the more recent views on infection, immunity, and prophylaxis. The second part, by E. Gotschlich, is devoted to subjects of general interest in connexion with the morphology and biology of pathogenic and allied bacteria. It is divided into several sections, each of which deals briefly with a special subject, and is followed by a short bibliography. Section A is devoted to the classification of the pathogenic and closely allied species; Section B (1), which deals with the forms assumed by different species under various conditions of growth, contains references to recent views on developmental cycles; Section B (2) describes the staining characters, and includes separate subsections on the structure of the nucleus, the metachromatic granules, the mechanism of spore production, the cell contents, the capsule, and the flagella. In Section Ç such subjects as the size and specific gravity of bacteria, their relation to surface tension, osmotic and electrical phenomena are considered. Section D deals with the chemical constitution of bacteria and their staining reactions, and Section E with the effects of different temperatures, and the influence of oxygen supply on the growth of different forms. Sections F and G are devoted respectively to the food requirements and the products of pathogenic species. In this fasciculus the authors have summarized, with adequate references to the scattered literature, much of the available information on many subjects of the greatest interest, both to general bacteriologists and to those specially concerned with the pathogenic forms.

Fasciculus 2, which is devoted to the bacteriology and epidemiology of Asiatic cholera, forms the first part of Volume IV. This fasciculus is divided into two parts. The first part (pages 1-124), by W. Kolle and R. Prigge, commences with a short history of the greater epidemics and of the earlier bacteriological work. Two short sections on the pathological findings and the relationship of *V. cholerae* to the disease are followed by two long and important sections on the cultural characters and requirements of this vibrio and its pathogenicity to man and animals. Other important sections deal very fully with the products of *V. cholerae*, the differential diagnosis from organisms resembling it, the epidemiology of the disease, therapeutic measures, prophylaxis, and directions for obtaining materials for examination from various sources. In another interesting section the cholera-like vibrios are described. This part concludes with a bibliography of seventeen pages, including references up to 1926, and four coloured plates illustrating the characters of typical colonies and the appearance of the vibrios in the excreta and in sections of the tissues. The second part (pages 125-178), by H. Hetsch, deals with immunological researches in relation to cholera, and includes important

[2] *Handbuch der pathogenen Mikroorganismen.* Begründet von W. Kolle und A. v. Wassermann. Dritte, erweiterte Auflage herausgegeben von W. Kolle, R. Kraus, P. Uhlenhuth. Jena: G. Fischer; Berlin und Wien: Urban und Schwarzenberg. 1927. (Sup. roy. 8vo, Lieferung 1, Band I, pp. 160; 6 plates; M.13.20. Lieferung 2, Band IV, pp. 178; 27 figures, 4 plates; M.13.20. Lieferung 3, Band IV, pp. 234; 33 figures, 11 plates; M.19.50.)

sections on active immunization with living and dead cultures and filtrates; passive immunization; the nature of the immunity; serum diagnosis; prophylactic inoculation and serum therapy. This part concludes with a bibliography of eight pages.

This excellent survey of our present knowledge in regard to the bacteriology of cholera should prove of the greatest assistance to medical officers who are called upon to combat this alarming disease.

Fasciculus 3, by A. Dieudonné and R. Otto, which is devoted to plague, forms the second section (pages 179-412) of Volume IV. A short section (I) on the history of plague is followed by an important section (II) on the morphology and cultural characters of *B. pestis*, and the influence of various agents upon it. In this section the very important subject of the pathogenicity of *B. pestis* towards various animals is considered at length, and its products and changes in virulence are discussed shortly. Section III deals chiefly with the pathological anatomy of the disease as it occurs in man, and Section IV with the bacteriological diagnosis. The latter section includes an interesting account of plague-like bacilli. Section V is devoted to a very thorough consideration of the immunology of plague, and Section VI to its epidemiology, including discussions on its original source and distribution, the parts played by commerce, climate, and periodicity in its spread, the relation of rats, mice, and many other rodents to the bubonic type of the disease in the human subject, chronic plague in rats, and the relative importance of their ectoparasites, especially fleas of different species. A subsection is devoted to pneumonic plague. Section VII deals with prophylactic and preventive measures, and includes much useful information on the destruction of rats and the diagnosis of plague in rats. A bibliography of twenty-four pages includes papers published up to the latter part of 1926. Of the eleven plates placed at the end of this fasciculus, five are coloured and illustrate colonies of *B. pestis*, the lesions of plague in guinea-pigs, and several species of rodents responsible for the spread of plague. Of the remaining plates, two show the external characters of important fleas; two, in the form of charts, illustrate the relationship of rat to human plague; and one, in the form of a folding map, the distribution of plague throughout the world in 1924.

This fasciculus gives an able summary of the bacteriology of plague and the complex problems relating to its spread, but we note the unfortunate omission of figures illustrating the internal anatomy of the flea and the mechanism of "blocking" in *X. cheopis* by the growth of *B. pestis*.

FAR EAST MOSQUITOS.

DR. A. T. STANTON, whose days of rich personal research have been ended by his official appointment at the Colonial Office, where his opportunities for directing and furthering research by others will find even ampler scope, has brought together a series of nine papers on *Malayan Culicidae*,[3] which had previously been issued in different periodicals. Seven of them have appeared in the *Bulletin* of Entomological Research, and one each in the *Indian Journal of Medical Research* and the published Report of the Federated Malay States Malaria Advisory Board; the dates cover the period from 1912 to 1920. The first three and the sixth and seventh form studies of the larval and adult stages of the Malayan anopheles, and constitute an examination into the various species which have been mentioned by previous writers; the results go to prove that several are identical, and their names revert therefore to the position of mere synonyms. The fourth and fifth papers deal similarly with Sumatran culicidae. The seven taken together are a serviceable counterblast to the tendency to make new genera and species on very small differences, and will thus help greatly to facilitate identification.

From the points of view of industry and general hygiene the last of the series, which is on the mosquitos of Far Eastern ports, with special reference to the prevalence of *Stegomyia fasciata*, is of the greatest importance, or perhaps was at the time the article was written, for the inquiry was undertaken to find out whether the suggested menace of the spread of yellow fever from the West to the East, as the result of the opening of the Panama Canal, was a real one, and if so, what steps could be taken to obviate the danger. The author showed that this mosquito, the transmitter of yellow fever, is present in the Far Eastern ports of the equatorial region at all seasons, and therefore, if a yellow fever patient was introduced, conditions are favourable for the spread of infection. But the trade routes were still the northern ones, by way of Honolulu, China, and Japan, and here the mosquito, if found at all, was in very small numbers. Also—and this is more consoling—it was noted that in the modern steel ships the mosquito was not found, even though the vessels had come from ports heavily infested. Apart, therefore, from the improvement in hygienic measures of recent days, the risk of devastation by yellow Jack of the old buccaneering times by transport of infected mosquitos may be dismissed. The papers here collected are embellished with some excellent diagrams and drawings by Miss Ruth Ford and Mr. Engel Terzi.

[3] *Notes on Malayan Culicidae.* By A. T. Stanton, M.D., F.R.C.P., D.P.H. Studies from the Institute for Medical Research, Kuala Lumpur, Federated Malay States, No. 20. London: J. Bale, Sons and Danielsson, Ltd. 1926. (Cr. 4to, pp. 95; illustrated. 5s. net.)

CHEMOTHERAPY: SYPHILIS.

THE *Principles and Practice of Chemotherapy*[4] of DR. JOHN A. KOLMER, professor of pathology in the University of Pennsylvania, is a work that, as its author claims in the preface, must have entailed a vast amount of labour. An enormous literature has been perused, sifted, and classified in order to make the bibliography as complete as possible. The subject of chemotherapy is dealt with in both its theoretical and practical aspects, and since the greatest advances in it have been made in the treatment of syphilis, trypanosomiasis, leishmaniasis, and other metazoan infections, these diseases are discussed in detail and used to illustrate certain guiding principles underlying the department of therapeutics. Many of our original ideas and theories of chemotherapy have been shown to be inadequate to explain facts now known, and in making the necessary modifications of these theories the author has drawn largely upon examples taken from salvarsan therapy to illustrate his points. Ehrlich's original theory of a "therapia sterilisans magna" has long been abandoned, and the mechanism of chemical disinfection has been shown to involve the co-operation of the tissues of the host. This co-operation lies in the formation of new chemical combinations after the administration of the salvarsan, so that the action of the drug is indirect, and the mechanism of chemotherapy more complex than was originally surmised. These modifications of early views of the mechanism of chemotherapy have emphasized the importance of the biological factor in the treatment of such a disease as syphilis, and have, therefore, broadened the field of investigation.

Fortunately the author has been in a position to deal with both the chemical and the biological aspect of his subject, and the fact that he is fully conversant with the clinical treatment of syphilis has given to his work a practical value which it might not otherwise have possessed. Dr. Kolmer, indeed, lays particular emphasis on the practical side of the subject. The last two parts of the book he devotes entirely to the various methods of administering antisyphilitic medicaments and to the prophylaxis and treatment of syphilis. However, although it has obviously been his aim to supply an up-to-date survey of the modern treatment of syphilis, this work will become known as a treatise on chemotherapy rather than as a manual of syphilis. It is a book that will be welcomed by workers in this important field of medicine, who will find in it principles that may be applied to the study of diseases other than syphilis, as well as an excellent bibliography.

[4] *Principles and Practice of Chemotherapy.* By John A. Kolmer, M.D., Dr.P.H., D.Sc.(Hon.). Philadelphia and London: W. B. Saunders Company. 1926. (Roy. 8vo, pp. xvi + 1106; 81 figures. 55s. net.)

ANNALS OF MEDICAL HISTORY.

AMONG the eight main articles in the Spring Number of *The Annals of Medical History*[5] there are two, both dealing with physiology, suggesting a graphic method of presenting the main events in scientific history: Dr. Oscar W. Richards of Eugene, Oregon, gives a graph illustrating the history of this subject, and briefly explains it, and Dr. Henry Sewell of Denver's article on visualizing medical history contains a figure showing the milestones in medical progress in the physiology of respiration, which is annotated with names from Hippocrates to E. B. Rosa and accompanied by an ample text on the advances of our knowledge in this special branch of physiology. The activities of John Morgan (1735-89), of Quaker ancestry, in Philadelphia and "the father of medical education in North America," whose portrait appears on the cover, are described by Dr. W. S. Middleton of Madison, Wisconsin. Laennec's portrait forms the frontispiece, and there is a well illustrated account of his life by Dr. Gerald Webb of Colorado, the article being described as "edited by W. F. C. Nelson, B.A., B.D.," who signs a foreword. Dr. G. C. Peachey contributes a sketch of Sir Humphry Davy, extracted from a manuscript commonplace book of Mrs. Matthew Baillie written in 1831 and giving her impression of his personality to correct a passage in Dr. Ayrton Paris's life. Sir George Murray Humphry's life is outlined by Sir Humphry Rolleston, and Dr. Henning Larson of Iowa describes with numerous quotations an old Icelandic manuscript, written almost entirely in the Icelandic dialect, which was discovered some years ago in the library of the Royal Irish Academy. There is a well illustrated study in palaeopathology on vertebral lesions in the sabre-tooth pleistocene of California, resembling the so-called myositis ossificans progressiva, compared with certain ossifications in the dinosaurs by Dr. Roy L. Moodie. Dr. PACKARD, to whom the *Annals* owes so much, writes on the centenary of Phillipe Pinel (1745-1826), the father of the modern treatment of mental diseases, and reviews also Dr. W. H. S. Jones's translation of Hippocrates.

NOTES ON BOOKS.

HEWLETT'S *Manual of Bacteriology*[6] is so well known that it is unnecessary for us to do more than announce that another edition, the eighth, has appeared. We notice that it is nearly twenty years since the book was first published, and it is surprising to be told, on reading the preface to this edition, of the quantity of alterations and additions which have been necessary in order to incorporate the result of researches published within the last five years. A little has been taken away and much has been added, with the result that the book steadily grows in volume and in usefulness.

BRAZIER HOWELL, the secretary of the American Society of Mammalogists, in his *Anatomy of the Wood Rat*,[7] refers to the paucity of studies on the internal anatomy of the mammalia, and to the tendency to study comparative curiosities, such as the aye-aye, rather than the more common types. Even so common a laboratory subject as the white rat has never been thoroughly treated. The object of the author has been to gain a comprehensive understanding from a practical point of view of the gross anatomy of a medium-sized, widely distributed rodent. Such a work would, the author conceived, constitute a useful basis for investigating to better advantage the convergence exhibited by mammals of different affinities toward types highly specialized for definite modes of life. The study has been made comparative in order to investigate the anatomical variations to be expected within those closely related groups which are termed subgenera; and, accordingly, *Homodontomys* has been arbitrarily selected as the basic type with which to compare *Neotoma* and *Teonoma*.

[5] *Annals of Medical History* (Spring Number, 1927), Vol. ix, No. 1. Edited by Francis R. Packard, M.D. New York City: Paul B. Hoeber, Inc.; London: Baillière, Tindall and Cox. 1927. (8¾ × 12½, pp. 110; illustrated. Subscriptions in Great Britain, £2 2s. per volume of four numbers.)

[6] *A Manual of Bacteriology.* By R. Tanner Hewlett, M.D., F.R.C.P., D.P.H.Lond., etc. Eighth edition. London: J. and A. Churchill. 1926. (Extra post 8vo, pp. x + 645; 63 figures, 38 plates. 18s. net.)

[7] *Anatomy of the Wood Rat.* By A. Brazier Howell. Monographs of the American Society of Mammalogists, No. 1. London: Baillière, Tindall and Cox; Baltimore: The Williams and Wilkins Company. 1926. (Med. 8vo, pp. x + 225; 37 figures, 3 plates. 22s. 6d. net.)

Professor HOFFMANN of Bonn has written a pamphlet on the abolition of syphilis,[8] in which he recounts those modern discoveries which, in his opinion, have made it possible to wipe out the disease, if only the profession, patients, parliament, and the public will combine their efforts in the campaign. As regards medical treatment, he lays stress on the value of the method adopted at Bonn—namely, to administer an injection of bismuth into the muscles and of salvarsan into the veins twice a week for five or six weeks. The dose of salvarsan is large—0.6 gram for men, 0.5 gram for women—but the first dose is less by about one-third. This treatment suffices, he says, for early cases. In the secondary stage it is desirable to repeat the doses after a pause of five weeks. Hoffmann states that he has never found the above treatment to fail in private practice.

Mr. P. B. M. ALLAN, who has already written a volume for book-hunters, has now shared his own collection of favourite extracts with the public in the attractive volume *A Little Book of Loneliness for Those Who Are Wont to be Alone*,[9] in the hope that they also may find it comforting. The messages come from more than eighty writers of poetry and prose, and are arranged under headings. Under that of "Abodes of Peace" the author writes of a haven of refuge: "Happy indeed are those days when the book-lover has been accorded the freedom of some ancient library. A delicious feeling of tranquillity pervades him as he selects some nook and settles himself to read." This is the sensation that this little anthology will bring to the wise who read it.

The thirty-fifth edition of the Charity Organization Society's *Annual Register and Digest*[10] contains the features which have rendered preceding numbers so helpful to all interested in charitable work in London. The various charities and institutions are classified according as they give relief in affliction, sickness, or permanent and temporary distress; one section deals with reformatories and industrial schools. In a review of the past year an account is given of the finances of the metropolitan charities. A good index is provided.

The 1927 edition of *The Yearbook of the Universities of the Empire*[11] continues on the main lines of previous issues; the most notable change in the present volume is the addition of a list of the titles of theses accepted for the degree of Doctor at various universities during the year. Each university section contains a directory of the staff, a general account of the work, and notes of events of outstanding interest which occurred during last year, including statistics of the numbers of students and of degrees conferred.

[8] *Wie Kann die Menschheit von der Geissel der Syphilis Befreit Werden?* Von Dr. Erich Hoffmann. Berlin: J. Springer. 1927. (Roy. 12mo, pp. 54; 8 figures. R.M.2.40.)

[9] *A Little Book of Loneliness for Those Who Are Wont to be Alone.* Compiled by P. B. M. Allan. London: Philip Allan and Co., Ltd. 1926. (Fcap. 8vo, pp. xv + 240. 4s. 6d. net.)

[10] *The Annual Charities Register and Digest.* Thirty-fifth edition. London: Longmans, Green and Co., Ltd., and the Charity Organization Society. 1927. (Demy 8vo, pp. xx + 554. 8s. 6d. net.)

[11] *The Yearbook of the Universities of the Empire, 1927.* Edited by Walter H. Dawson. London: G. Bell and Sons, Ltd. 1927. (Cr. 8vo, pp. xii + 858. 7s. 6d. net.)

ROYAL MEDICAL BENEVOLENT FUND.

AT the last meeting of the committee forty-three cases were considered and £563 voted to thirty-nine applicants. The following is a summary of some of the cases relieved:

Daughter, aged 60, of M.R.C.S.Eng. who died in 1894. She has supported herself as a housekeeper until recently, when her mother's ill health obliged her to give up her post. They live in one room at a rent of 10s. a week; their joint income amounts to £94 per annum. Voted £24.

Widow, aged 61, of M.D.Durh. who died in 1910. Has supported herself by nursing and taking boarders until last year, when, owing to ill health, was obliged to give up flat, and now lives in a bed-sitting-room at a rental of 10s. a week. She receives £22 from investments and gifts amounting to £75. Voted £24.

Widow, aged 36, of M.R.C.S. who was killed in an accident last year. She was left with two children aged 7 and 2½, and asks for temporary help until her late husband's estate is settled. She is resuming her nursing and hopes to be able to manage later to support herself and children. Voted £20.

Daughter, aged 60, of M.R.C.S. who died in 1899. She and her sister look after their aged mother, let part of their house, and take boarders. Joint income: investments, £22; boarders, £129; letting, £70. Mother has old age pension and an Epsom pension. Rent and rates amounted to £75. Voted £26.

Subscriptions may be sent to the Honorary Treasurer, Sir Charters Symonds, at 11, Chandos Street, Cavendish Square, London, W.1.

The Royal Medical Benevolent Fund Guild still receives many applications for clothing, especially for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. The Guild appeals for second-hand clothes and household articles. The gifts should be sent to the Secretary of the Guild, 58, Great Marlborough Street, W.1.

SIXTH BRITISH CONGRESS OF OBSTETRICS AND GYNAECOLOGY.

DISCUSSION ON TREATMENT OF INFLAMMATORY CONDITIONS OF THE UTERINE ADNEXA.

THE sixth British Congress of Obstetrics and Gynaecology was opened in Manchester on April 27th, under the presidency of Professor W. FLETCHER SHAW. The first day was devoted to a discussion of the treatment of inflammatory conditions of the uterine adnexa.

Mr. ALECK W. BOURNE (London), in an opening paper on the operative treatment of acute salpingitis, emphasized the fact that inflamed tubes were a terminal phase in the infective process, and that the usual conservative treatment left them exposed to the danger of future exacerbations. He also stressed the necessity for thorough treatment of the whole genital tract, as well as the tubes, in order to eradicate the disease. As recovery occurred in most cases of acute salpingitis, it was chiefly necessary to discover how it could be hastened and how function could be restored. He thought that the question of operative intervention during the initial acute phase should be decided by the severity of the attack; in mild cases recovery occurred in a few days, but in more severe cases convalescence was apt to be tedious, and was usually followed by chronic pelvic lesions. In the latter type of case Mr. Bourne advocated early surgical intervention in order to curtail the acute phase and to lessen the chance of sequels. He recommended early and complete salpingostomy to ensure drainage of the tube and to prevent the subsequent formation of pyosalpinx; if the tubes were damaged beyond repair salpingectomy was preferable. He quoted 17 cases treated by salpingostomy in which convalescence had been rapid. Of 9 patients subsequently examined 5 were quite well, and none showed evidence of any pelvic swelling or induration. In no case, however, had there been subsequent pregnancy.

Professor BECKWITH WHITEHOUSE (Birmingham) read a paper on the expectant treatment of pelvic inflammation. He said that the question was, not whether severe grades of salpingitis should be treated without surgery, but when could surgery give the best results. He thought that operative treatment need only be considered in cases of severe salpingitis. He had examined the records of all cases of inflammatory pelvic disease admitted to the Birmingham General Hospital during thirteen years, and in this period 137 hysterectomies and 250 conservative operations had been performed. In the cases treated by hysterectomy the immediate mortality was 5 per cent., while in those treated by conservative means it was only 1.2 per cent. This was sufficient evidence to show the advantages of conservatism. His own results many years ago of operative treatment during the acute phase had been so bad that he had not dared to try Mr. Bourne's heroic measures. When intervention appeared necessary he preferred the vaginal route whenever possible. He would not change his policy of conservative treatment until a sufficiently large number of results by new methods showed improvements. Professor Whitehouse then emphasized the importance of general health and capacity for work in these patients in the formation of an opinion as to the value of treatment. In his series of patients given expectant and conservative treatment 73.5 per cent. were later able to perform their normal duties and 56.3 per cent. were in good health. Subsequent pregnancy had only occurred in 17 per cent. of those cases treated thus. In 9 cases where salpingostomy was performed none had since become pregnant. In cases where large pelvic abscesses had been drained 22 per cent. had subsequently conceived, showing that extreme suppuration in the pelvis did not necessarily induce sterility. Subsequent dyspareunia was entirely absent in 73 per cent. of his cases. Professor Whitehouse advocated expectant and conservative treatment in acute salpingitis because (1) the mortality was low; (2) if surgical intervention were undertaken later it was safer and the mortality lower; (3) in only a small percentage of patients treated by conservative surgery was radical surgical treatment necessary later; (4) the after-results were good as to the production of healthy individuals, and though fertility was impaired it was not always destroyed. He strongly advocated the use of lipiodol when surgical intervention was necessary; it might be injected into the posterior fornix, or into the uterus and tubes, or be smeared over the pelvic organs.

Professor A. H. CURTIS (Chicago, U.S.A.) read a paper entitled "Surgical indications in the treatment of gonorrhoeal lesions of the uterine adnexa," based on clinical and laboratory experience extending over seventeen years. He said that it was practically never possible to find or recover the gonococcus from the tubes later than two weeks after the disappearance of fever. He was therefore certain that persistent active gonorrhoea in the tubes was due to recurrent rather than chronic infection, and that only if reinfection were prevented could healing take place. In St. Luke's Hospital he adopted a principle of "absolute clinical conservatism" in acute salpingitis, surgical intervention being employed only for the sequels of the disease. He did not advocate surgical intervention for sterility alone unless desired by the patients, and in St. Luke's Hospital only 15 per cent. of the cases were ever operated upon. As regards the operative procedure he emphasized the point that in gonorrhoeal cases blunt dissection would always easily separate adhesions. For raw areas he advised omental grafts. When operating for sterility he recommended air inflations from within the abdomen to detect the sites of obstruction. He was inclined to favour conservatism as regards preserving the ovaries whenever possible, but he reiterated the point that for conservatism to ensure cure the patient must avoid any possibility of reinfection.

Professor BLAIR BELL (Liverpool), in a paper on the conservation of ovarian function in the surgical treatment of salpingitis, said that when all women became as masculine or neuter as many were to-day, the question of ovarian conservation would be of less moment; in fact, ovaries might then be removed at birth to expedite the process of evolution. However, for the present, he thought all would agree that the ovary had valuable functions, both to the race and to the possessor. He considered the indiscriminate "clean sweep" operation a surgical sacrilege, and he asked why the same ruthlessness did not apply to the testes. With regard to the question when the ovaries should be left, he thought that whenever possible it should be in the normal position, slung up by the round ligament, so as not to fall into the pouch of Douglas. Where, however, removal of the tube had interrupted the ovarian blood supply and there was danger of subsequent cystic degeneration, he favoured the grafting of this ovary. He thought that in the absence of the tubes an ovarian graft in the uterine wall occasionally made possible a subsequent pregnancy; in fact, he sometimes practised this with the ungrafted ovary after bilateral salpingectomy. Where pregnancy did not matter he put an ovarian graft in the rectus muscle.

Dr. S. J. CAMERON (Glasgow), discussing the radical treatment of pelvic infection, emphasized the fact that it was possible nowadays, with a perfected surgical technique, to restore to health the depressed victim of chronic inflammatory pelvic disease, who some thirty years ago would have remained in chronic ill health all her life. He drew attention to the importance of examination of the cervix prior to operation, and its removal if unhealthy; neglect of this point often rendered the operation unsuccessful. In performing total hysterectomy he advocated the closed operation, using Wertheim's clamps in order to minimize the risk of peritoneal infection from a septic cervix. Another useful method was to start with the patient in the lithotomy position and to swab the cervical canal with pure carbolic acid followed by spirit, then closing the cervical canal by a mattress suture. A circular incision was made round the cervix and the vaginal wall was separated, the uterine artery being clamped on both sides. The abdomen was then opened and the uterus freed, after which an assistant removed it through the vagina. In this way the infected cervix never entered the peritoneal cavity. He advocated the use of catgut only, since silk acted as a foreign body for long periods. He thought that conservation of the ovaries was advisable in as many

cases as possible. He emphasized the importance of thorough peritonization of raw areas to prevent subsequent adhesions, and also advised that the operation should be abandoned when laparotomy showed the tubal infection to be tuberculous, owing to the risk of producing intractable faecal fistulae.

Dr. BETHEL SOLOMONS (Master of the Rotunda Hospital) read a paper on the end-results of salpingostomy. He considered that however meagre the chances of pregnancy might be, conservative measures should, whenever possible, be adopted. Although his results had been disappointing, he expected improvement in the future. He advocated insufflation of the tubes from the cervix during the abdominal operation in order to demonstrate the site of obstruction. In those cases blocked at the fimbriated end of the tubes the adhesions should be gently divided and the lumen exposed; a plait of No. 2 catgut should be inserted to keep the ostium open. In 72 cases where he had done this, 32 patients subsequently became pregnant. If it were necessary to resect the end of the tube, catgut should be put in the lumen as before. In 25 cases where the fimbriated end had been resected, 6 patients subsequently conceived. Cases where the tubal isthmus was affected were more difficult to treat. He advocated resection of the diseased portion with end-to-end anastomosis, leaving a strand of catgut in the lumen as before. To ensure that the catgut entered the uterine cavity he always split the fundus uteri and pulled the catgut through into the uterine cavity, subsequently closing the uterine wound. Out of 15 cases of this type, one patient had become pregnant. In cases where the uterine end of the tube was affected the same procedure was adopted, but a new junction was made between the tube and the uterine cornu. In 24 cases where this had been done, 3 patients had subsequently become pregnant. He pleaded for a more general adoption of these procedures to avoid seeing the result of "Love's labour lost."

General Discussion.

Dr. WILLIAM P. GRAVES (Baltimore, U.S.A.) said that conservative surgery was an integral part of gynaecology, and distinguished the gynaecologist from the general surgeon. There were two points to keep in mind when operating—first, the restoration of the patient to health, and secondly, the restoration to fertility. As regards the latter, the decision rested with the patient in the absence of symptoms. He divided cases of adnexal inflammation into four groups: (1) following appendicitis; (2) following puerperal infection; (3) gonorrhoeal; (4) tuberculous. In the first two types the possibility of operative restoration of function was good, since the condition was a perisalpingitis, but in the latter two it was bad, because the lesion was an endosalpingitis. He believed in suspending the uterus in these cases, and did not think conservative treatment or removal of the ovaries made much difference.

Professor MILES PHILLIPS (Sheffield) believed in taking away the ovaries when the uterus had to be removed. He thought the surgical menopause less severe than the normal, but added that this should be carefully explained to the patient in order to prevent neurosis. He strongly deprecated the practice of operating in the acute phase of salpingitis.

Professor BRIGGS (Liverpool) deplored the fact that there was too much operating, and strongly advocated conservatism.

Professor Sir EWEN J. MACLEAN (Cardiff) also approved conservatism. He did not think many cases of salpingitis followed appendicitis, and he asked how Dr. Curtis distinguished streptococcal from gonococcal infection at the time of operation. He had never had a successful salpingostomy.

Professor R. J. JOHNSTONE (Belfast) advocated tuberculin treatment in tuberculous salpingitis. If he found a tuberculous infection at operation he closed the abdomen without attempting removal. He did not agree in operating during the acute phase of acute salpingitis.

Mr. COMYNS BERKELEY (London) did not consider it of great importance whether the ovaries were conserved or not, but, other things being equal, he left them so that the patient would not consider herself unsexed. He thought that removal of the ovaries sometimes caused shrinkage of the vagina and subsequent dyspareunia. He never operated until the temperature had been normal for a week, and, when operating, he suspended the uterus in order to prevent the sequel of an adherent retroversion. He found a far higher mortality in cases where the uterus was removed than when it was left.

Professor ARCHIBALD DONALD (Manchester) said that in regard to subacute infection his experience had been different from some of the previous speakers; the picture had often been so bad that to treat by drainage seemed dangerous. In cases where he had done this there was often a chronic after-history. He said he found the more radical operation better, with a clean sweep across the pelvis and gauze drainage into the vagina. With this he had had few fatal cases. He thought that it was as bad for a woman to have a uterus without ovaries as to have ovaries without a uterus. This opinion was based on forty years' experience, and he was certain that a completely unsexed woman was better than one half-sexed. He found adhesions more frequently after simple sling operations where there was no inflammation than in inflammatory cases, so other factors than the inflammatory were concerned in their production.

Dr. T. W. EDEN (London) thought it very hard to distinguish between septic and gonorrhoeal cases. He had never regretted leaving acute cases alone, though it might be necessary to perform some small operation later. He did not think it was surgically sound to drain acute pus tubes into the peritoneal cavity.

Dr. J. HENDRY (Glasgow) had found that 60 to 70 per cent. of cases of tubal infection followed puerperal infection. His results of cases operated upon in the acute phase had been unfortunate, and he strongly deprecated the procedure. He considered vaginal drainage, when possible, the method of choice. In 78 cases treated expectantly death had occurred in only 2, and these were hopeless cases. In 200 cases treated by operation there had been 9 deaths.

Professor C. G. LOWRY (Belfast) did not advise operation during the acute phase. He had not had much success with salpingostomy and rather favoured removal of the ovaries.

Mr. FURNEAUX JORDAN (Birmingham) congratulated the congress on the high standard of the papers. He was not in favour of the vaginal drainage for pus tubes, since this operation implied working in the dark; it made subsequent abdominal operation more difficult. He thought that to improve fecundity more might be achieved by stopping birth control than by acrobatic operations.

Professor R. W. JOHNSTONE (Edinburgh) said he came between the two extremes. He preferred expectant treatment which allowed of conservatism later. In cases of women aged about 40 he always removed the ovaries, and thought that it was not harmful.

Dr. CAMERON, replying, said that to avoid raw surfaces he either removed the uterus or covered its raw posterior surface, making a peritoneal diaphragm by freeing the sigmoid. All tuberculous tubes should be excised if this could be done early without risk to the patient, but not when the operation was difficult. He thought that the possibility of faecal fistula was then too great to justify the risk.

Dr. CURTIS said that by waiting as long as possible the number requiring operation was reduced to 10 per cent. in acute gonorrhoeal cases. He only operated to relieve suffering. As to the type of infection in ovaries at operation, he recognized the gonococcal by the ease of dissection, the types of adhesions, and from the history of abortions. Sometimes the distinction was impossible.

Dr. BOURNE concluded that conservation of the ovaries depended on what would happen to the ovary after the uterus had been removed. If it could persist and function then it should be left, but it probably atrophied, and in this case it should be removed. He did not operate in acute exacerbations of chronic disease, but only in the first attack of gonorrhoeal salpingitis.

Dr. SOLONUS deprecated operating in the acute stage of salpingitis. He knew of cases where surgeons had copied Dr. Bourne's method with fatal results. He removed tuberculous tubes if this could be done early, leaving the uterus.

Professor BLAIR BELL (Liverpool) said that he had been careful to state that his cases were mild ones when the ovaries were merely doubtful. He did not advocate conservation of the ovaries if they were badly damaged. He deprecated the tendency to omit biological problems. A woman had a reproductive function which should be maintained. Dr. Curtis alone had touched the real issue in his remarks about the ovary before and after puberty. He agreed that the ovary after puberty was mainly reproductive, but it still had some other endocrine function. If ovaries were removed then there were retrogressive changes in the thyroid which impaired the patient's intellect. He had also seen very severe cases of artificial menopause, even causing insanity. In acute cases he thought the streptococcus was the dangerous organism. Salpingostomy alone was only of benefit in streptococcal cases when there was slight damage, but in gonococcal cases the isthmus must be excised as Dr. Solomons had stated.

Entertainments.

On April 27th members of the congress were entertained at luncheon at the Royal Infirmary by the local council of the North of England Obstetrical and Gynaecological Society. In the evening the President and Mrs. W. Fletcher Shaw held a reception in the Whitworth Gallery, which was largely attended. The congress dinner was held on April 28th, at the Midland Hotel, Manchester, with the President in the chair. Among those present were: Dr. Arthur Curtis of Chicago, Dr. W. P. Graves of Baltimore, Sir Francis H. Champneys, Sir William Milligan, Sir Ewen Maclean, Professor Donald, and Professor Ramsbottom.

(To be concluded.)

SPIROCHAETAL JAUNDICE.

REPORT ON ITS OCCURRENCE IN SCOTLAND.

A REPORT of the Medical Research Council issued this week[1] presents the results of an inquiry regarding spirochaetal jaundice in Scotland, made by Dr. G. Buchanan, now at the South African Institute for Medical Research. In 1923 there occurred among coal miners in East Lothian an outbreak of jaundice of unknown origin which proved, on bacteriological investigation by Dr. Buchanan, then a lecturer on bacteriology at the University of Edinburgh, to be associated with the presence of an organism identified as *leptospira* or alternatively *Spirochaeta icterohaemorrhagiae*, the contagium vivum of spirochaetal or infective jaundice, known also as Weil's disease. As spirochaetal jaundice was made notifiable by the Scottish Board of Health in February, 1924, a number of cases, besides those of the original outbreak, came under observation, up to a total of 51. In 29 of these spirochaetal jaundice was excluded on clinical or laboratory grounds. The remaining 22 formed the main material of the inquiry.

In an historical survey Dr. Buchanan traces the record of infective jaundice from 1745, when its prevalence in Minorca was reported by Cleghorn, to the discovery in 1914 by Inada and Ido of the spirochaete which they called *Spirochaeta icterohaemorrhagiae*. In 1915 severe cases of fever with jaundice had been noted, especially among men in the trenches, by medical officers with our armies on the Western front. In 1916 a translation of the work of Inada and Ido, till then published only in Japanese, was sent over to France by the Medical Research Council, and the jaundice of the trenches with which our soldiers were affected was at once recognized by Captain Adrian Stokes, now professor of pathology at Guy's Hospital, as due to *Spirochaeta icterohaemorrhagiae*. The French medical service, soon after, confirmed the same fact for French troops in the west. German observers, without reference to the Japanese work, had noted a similar condition in the German armies. Since the great war there have been a number of sporadic outbreaks in Germany, Havana, the Argentine, Sweden, Sumatra, and France, including also cases in England and the Scottish series now under review.

The symptoms exhibited by Dr. Buchanan's 22 cases agree in the main with accounts of the disease in other countries. Jaundice appeared in all and haemorrhages in most. A minor variation was the comparative infrequency of haemorrhagic herpes labialis, which was present in 5 per cent. only. Of the 22 cases, 8 were coal miners, and of them 2 died. Of the 14 remaining cases 11, who were young persons, recovered. The other 3, who were male adults over 35 years, died. One worked in a brewery, one was an aluminium worker, and one was a labourer in a piggery. Thus the total deaths numbered 5.

In the 5 fatal cases the liver showed no marked alteration in lobular structure, but varying degrees of cloudy swelling were noted. The destructive and regenerative liver changes described by Stokes and others were not observed. In the kidney the convoluted tubules showed changes, from cloudy swelling to granular disintegration with local cell necrosis. The glomeruli, apart from congestion, were little altered. The lymph glands and suprarenal bodies showed haemorrhagic changes. The spleen displayed atrophy of the Malpighian bodies, and the lungs localized intra-alveolar haemorrhages, marked congestion, and oedema. In all 5 cases spirochaetes were demonstrated microscopically, after some search, in the tissue of the kidney, liver, lung, or heart muscle.

The guinea-pig, which is highly susceptible to the spirochaete, was employed by Dr. Buchanan in his experimental investigations. The method he followed and its results are set forth in detail. A constant feature in the blood counts of infected guinea-pigs was a relative small lymphocytosis in the early stages. The author suggests that this phenomenon, which he was the first to observe, may be applicable in the diagnosis of human cases. The jaundice of infected guinea-pigs, which is usually obvious, is, in the author's view, not haematogenous, despite the pronounced blood destruction which takes place. The spirochaete is readily demonstrated in the blood of guinea-pigs, which differ in this particular from man.

The morphology of leptospira, with its fine elementary spirals, was carefully explored. For the living organism the dark-ground microscope was best. With film and tissue preparations Fontana's method gave excellent results. For primary culture the most favourable medium was Noguchi's semi-solid medium B.

An investigation was made of the distribution of leptospira in nature, including a study of its occurrence in rats. Among 166 rats obtained from the three Lothians, Fife, Ayrshire, and other Scottish counties, 61, or 36.7 per cent., were ascertained to be infected with virulent spirochaetes. Two field mice, two house mice, a cat, and a silver fox were also examined, but only one field mouse showed leptospira. Dr. Buchanan's demonstration of a strain of leptospira living free in the slime in the roof of a tunnel in a wet East Lothian pit where cases of spirochaetal jaundice had occurred was an important discovery. The organism was identified under the microscope and proved pathogenic, killing two guinea-pigs, which showed the infective organism in abundance, together with the jaundice, haemorrhages, and other indications of typical spirochaetosis.

In attempting the diagnosis of infective jaundice in man by bacteriological methods some difficulties were experienced. Blood examinations for the spirochaete and blood inoculations into guinea-pigs all proved negative. Microscopic examination of the urine frequently revealed the organism, though never in its typical form, and the results of the inoculations of guinea-pigs with infected urine were very uncertain. Convalescent blood serum failed to agglutinate the spirochaete, but a lytic action was observed. The ill success of these endeavours is ascribed in part to the advanced stage of illness in which certain cases came under notice.

The information conveyed by Dr. Buchanan's report should stimulate preventive work in mines, pointing to the need for rat extermination and drainage of wet workings. To the medical reader it is of interest in view of the dangerous character and possible wide distribution of the infective agent with which it so competently deals.

[1] Medical Research Council. Special Report No. 113. H.M. Stationery Office, or through any bookseller. Price 4s.

British Medical Journal.

SATURDAY, MAY 7TH, 1927.

PROPHYLACTIC VACCINATION OF THE NEWLY BORN AGAINST TUBERCULOSIS.

THE method of vaccination introduced by Professor Calmette against tuberculosis in infants has been described and commented on in previous articles;[1] it will be remembered that the method consists in giving three doses, each of 10 mg., of a non-virulent strain of tubercle bacilli to infants during the first ten days of life. A considerable number of infants have now been treated by this means, and the results obtained are reported in the current number of the *Annales* of the Pasteur Institute in Paris.

Two batches of figures have been examined independently by two statisticians. The first statistician, M. Moine, reports on 882 infants that were vaccinated from one to two years previously and were brought up in a tuberculous environment. Of these 7 died of presumably tuberculous lesions and 72 died of non-tuberculous lesions during the first two years of life. The mortality from tuberculosis, therefore, was 0.8 per cent.; from all causes 8.9 per cent. The second statistician, Dr. Y. Biraud, reports on 1,537 infants that had been brought up in a tuberculous environment and had been vaccinated during the years 1924 to 1926. It is not clear whether Dr. Biraud's figures include some or all or none of the cases reported on by M. Moine. The general mortality during the first year of life was 7.29 per cent.; the tuberculosis mortality was 1.84 per cent. These calculations were obtained by what the author calls the "particularly precise method of the life-table." On the other hand, the tuberculosis mortality during the first year of life amongst the non-vaccinated infants in France brought up in a tuberculous environment is assessed at 25 per cent. The difference between the vaccinated and non-vaccinated groups is so striking as, in the author's opinion, to leave no doubt of the efficacy of the vaccination.

Professor Calmette's figures are, perhaps, not quite so complete as could be wished. In the absence of compulsory notification of tuberculosis he has been forced to rely on statistics of tuberculosis dispensaries. From these and other statistics Professor Calmette considers himself justified in stating that at least 24 per cent. of infants in France born of tuberculous mothers, or brought up in tuberculous surroundings, die of tuberculosis under the age of 1 year. He does not, however, tell us the general mortality of these infants from all diseases, a figure which should have made his comparison even more striking. If in 882 vaccinated children in tuberculous surroundings under 2 years of age 7 die of tuberculosis and 72 of non-tuberculous lesions, and if in the non-vaccinated 25 per cent. die of tuberculosis in the first year of life, the general mortality amongst non-vaccinated infants of the same class must be at least 30 per cent., probably more, as compared with the 8.9 per cent. of M. Moine.

The striking difference in Professor Calmette's figures raises also the question whether the infants in the two groups were statistically comparable. It is possible that the vaccinated group of infants was more directly under the control of tuberculosis clinics, and that the vaccinated were therefore brought up under stricter precautions. Probably not much importance is to be attached to this, inasmuch as the statistics in both groups were obtained from tuberculosis clinics, both groups of children appear to have been brought up in their own homes, and both belonged to definitely tuberculous families.

It would seem that of the data upon which Professor Calmette bases his conclusions, his estimate of the tuberculosis mortality in infants under 1 year of age requires most careful examination. A warning that the French mortality rates are not necessarily applicable to other countries has now been given by Drs. R. Kjer-Petersen and J. Ostenfeld of Denmark,[2] These authors investigated the death rate of infants under 1 year who were living in tuberculous homes in Denmark. Their statistics show that in the five-year period 1890-94 there were 611 deaths from tuberculosis among infants under 1 year in the Danish towns, or a death rate of 6.2 per 1,000. In the latest five-year period (that is, 1920-24) there were 212 such deaths—that is, a death rate of only 1.6 per 1,000. In the same five-year period 183 infants died of tuberculosis in the country districts in Denmark. Thus the total death rate for town and country from tuberculosis among infants under the age of 1 year was 1.15 per 1,000. Comparing these figures with the corresponding figures of other countries, the authors show that only the United States are better off in this respect. They have investigated at the two tuberculosis stations in Copenhagen the fate in the first year of life of all the children born within the six-year period July 1st, 1919, to June 30th, 1925, in homes where there were open cases of tuberculosis. They took care to exclude all such cases in which there might be a doubt as to exposure to infection; when, for example, an infant was born a month after the death of a father suffering from open tuberculosis it was not included in the statistics. Moreover, they did not include infants who were taken directly after birth from their tuberculous mothers and kept isolated from them throughout the first year of life. Cases of extensive but sputum-negative tuberculosis were also not included, nor infants born in homes where the father had been previously tuberculous but where the disease had not become "open" until two years after the birth of the infant. After these deductions had been made, there remained 206 homes in which there was open tuberculosis, and in which 245 infants had lived in the period under review. It was found that 226 of the 245 infants were alive, and 19, or 7.7 per cent., had died by the end of the first year. The cause of death in 12 of these 19 cases was certainly tuberculosis—that is, it was responsible for the death of 4.9 per cent. of the 245 infants. The authors draw attention to the discrepancy between these figures and those quoted by Calmette as a standard by which the results of his vaccination with attenuated tubercle bacilli can be judged. They also quote two other series of investigations: one by K. Schäffer, who stated that only 5 deaths from tuberculosis under the age of 1 year occurred among the 133 infants born to mothers suffering from open tuberculosis and treated in a Danish sanatorium, the death rate being 3.8 per cent.; the other by Bergman of Upsala, whose statistics included 1,004 infants. As many as 86 died in the first year, 36 of these deaths being certainly or probably due to tuberculosis. Bergman concluded that when both parents were tuberculous the death rate

[1] BRITISH MEDICAL JOURNAL, 1926, vol. i, p. 581; vol. ii, pp. 350 and 1189.

[2] *Ugeskrift for Laeger*, March 31st, 1927, p. 257.

from tuberculosis of their infants under the age of 1 year was 9.6 per cent., and when only one parent was tuberculous it was 5.2 per cent. These estimates also are much below those of Calmette, and the authors conclude that before his prophylactic system is adopted in Denmark accurate information must be available as to the death rate in the first year of life in Danish tuberculous homes.

The ideal experiment for testing Professor Calmette's results would be the division into two groups of the infants of supervised families in which the conditions of life were approximately similar. To one group the B.C.G. vaccine would be administered. The unvaccinated would be used as controls. To make the experiment complete it would be necessary to make a *post-mortem* examination on every child that died during the first year of life. But even without this any such difference in mortality as that recorded by Professor Calmette would be sufficiently suggestive.

HOMEWORK.

"EXCESSIVE homework dulls the growing mind. It seems desirable, therefore, that the hours assigned . . . in day schools to homework should be materially diminished. . . . If we regard homework as a factor in the evolution of interests that make for individuality, this is an advantage too dearly purchased." Taking as its text this extract from the report of the Board of Education's Consultative Committee on "Differences of Curricula between the Sexes in Secondary Schools," issued in 1922, our educational contemporary, *The Teacher's World*, is conducting a vigorous campaign in its columns against homework. It is alleged that despite this trenchant criticism of homework, or at least excessive homework, nothing has been done to bring about any material diminution. It is stated that children in the secondary schools now work two, three, or even quite commonly four hours a night on their lessons, and that this is an evil which has its origin in several conditions. First, there is the natural spirit of emulation between school and school, which results in a striving both of pupils and teachers to attain the highest level of successes for their own school. We do not know whether these successes still bring an occasional extra half-holiday, as they once did, but the spirit is the same. Further, there is a distinct tendency for teachers and heads of schools to strive for these fine results, since attainment brings honour and glory to themselves and the prospect of advancement in their profession. Again, these aims are laudable in spirit. "So long as employers regard a leaving certificate as a passport to employment, and so long as the certificate examinations are so framed that intensive study, if not cramming, is necessary to pass them, so long," we are told, "will schools be tempted to overstep reasonable limits in the setting of homework." Some of the difficulties appear to be due to defective arrangements in the schools. It is stated that teachers of different subjects set homework irrespective of the work set by other teachers. In some schools it is said to be the rule that no pupil shall do homework for more than half an hour, an hour, or two hours, according to age. If the child has found it impossible to complete his tasks in the stipulated time, he must take a note from the parent to that effect the next morning. This time limit is held to be a farce, and we can well believe there are difficulties in its application.

The articles that have been published by our contemporary are nothing if not vigorous in their style. In fact, they lose something in force by a hint of extravagance in adjectival qualification. Nevertheless, there is no doubt that homework is a problem that has to be faced. The solution is not easy. Secondary school work is hard work. The curriculum is heavy. There is such a volume of work that it cannot be got through in school hours. Moreover, some sort of leaving examination is advantageous as a stimulus to the child, for there is interest in working with a definite aim. If passed it is valuable as an indication of good work. That is why employers have learned to ask what the prospective employee has done at school and what evidence there is in the leaving examination. A practical domestic point is that homework may be welcomed by the parents where there are many children and the home space is small; work helps to keep the children out of mischief and under control; many a hard-pressed mother has blessed the relief that homework brings after the children's tea has been finished. Especially is this so in the winter months, when the children cannot get out of doors to play. On the other hand, parents may dislike home lessons because the son or daughter expects help in their preparation; whether to give such help will be a pleasure or a burden will depend on the temperament of the parents and their own standard of education.

The whole problem should be determined by the capacity of the child for work. Its hours at school must be known, and the excess to be allowed over these hours decided upon after the physical conditions and age of the child have been ascertained. It would appear that the working hours at secondary schools for day pupils average five and a half, with a Saturday whole holiday; the hours are not continuous; there is a short break in the morning session, and a long midday interval; moreover, the class work is varied, and is not all concentrated study. To this time-table there must be added something for the work done in travelling to and from school; secondary schools are not to be found at every street-end, and the children have to travel considerable distances; even where there is rail or road conveyance still some energy is expended. So that if we add half an hour as work done in travel, the sum of the day's work is six hours a day. The age of children attending secondary schools ranges from 12 to 16 years, and there is a wide variation in physical capability. What will be easy of accomplishment at 15 years may be exhausting if not impossible at 12. We are inclined to think that a rough and ready standard of homework might be obtained by allowing half an hour for each year from the age of 12 onwards. The 12-year-old pupil would have half an hour's work at night—that is, its lesson should be, in the judgement of an intelligent teacher, such as could be done in that time. The 13-year-old child might do one hour's lessons at home, and so on. But in no case should more than two hours' evening work be allotted, except in the final year, when examinations are in view and revision is necessary.

As to the character of the homework, should it be preparation for the next day's school-work—that is, new work—or should it be in the nature of recapitulation—that is, working out examples on the teaching of that day at school? It is evident that the answer must influence the degree of the stress involved by the work done at home. The modern tendency is to make it preparation. There is now a vogue for "individual study": the child is encouraged to work out problems for himself, and to take them to his teacher to be examined. It is amusing that this should be thought

to be anything new. It was quite a common practice in the last century, and the outraged boys alleged that while they were breaking their hearts over a proposition in Euclid or an abstruse point of Latin grammar, the master who seemed so busy at his desk was in fact reading a sporting paper! Without venturing to adjudicate upon such an essentially educational problem, we might be allowed to suggest that in this lies the essence of the stress of homework. If the teaching has been done well at school in the daytime, recapitulation in home lessons will be easy, although sometimes possibly boring to the bright child. If the work be new, and real preparation, then it will be hard work, and overwhelming to the spirit of the average but conscientious child. There's the rub—the difficulty of making the task fit the pupils, amongst whom there is so wide a variation in capacity and temperament. The solution is the cultivation of insight on the part of the teachers—more humanity. It is easy to attain this in a small school, where the personal contact between child and teacher is close; it is less easy in a large school. Nevertheless, it is essential to success in the fine art of child culture.

TYPHOID IN MONTREAL.

A FEW weeks ago telegrams from Montreal appeared in the English newspapers about what was clearly a rather serious epidemic of typhoid fever in that city. There was a certain air of reticence about these reports, which produced the impression that it had not been deemed expedient to present all the facts. The following dispatch from our Montreal correspondent, although it leaves some details unexplained, throws a good deal of fresh light on the matter and will be read with interest: "On March 5th last an outbreak of typhoid fever began in Montreal, which has only now (the middle of April) shown definite signs of abating. In the interval more than 2,300 cases of the disease have been reported, with over 180 deaths, so that the characters of an epidemic were fairly evident. The point is mentioned because efforts were made in the local press to give the impression that no epidemic did exist. The motive of this somewhat lame attempt at disguising the truth may have been the idea of reassuring the public, although it might fairly be asked what value lay in such assurance, when typhoid, of all diseases, is that on which the public should be most fully informed with regard to the precautionary measures that should be taken. Nor was the public at all reassured. Indeed, the most striking feature of the incident was the wholesale demand of the public for prophylactic inoculation. It may be questioned whether a similar importunity has occurred before. Perhaps a fillip was given by the action of the large general hospitals in opening clinics for free inoculation; and this was supplemented by one of the large insurance companies (followed later by other companies) in offering free inoculation to all their policy holders, and indeed to anyone else as well. Most of the large industrial concerns fell in with the idea, and the wave of prophylactic enthusiasm spread to a most remarkable extent. One insurance company alone inoculated over 45,000 people. The vaccine used was in a large proportion of cases of the typhoid strain alone, since there were very few cases of paratyphoid, and this form is not common in Montreal. The United States Army officials recognize its comparative rarity in the States by inoculating their troops against typhoid only, except in the region of the Gulf of Mexico. The epidemic was traced, after some initial uncertainty, to the milk supplied by one large distributing company, which also sold ice-cream and butter. The origin was soon apparent on inquiry into the milk supply of the families affected, although doubt was at first expressed as to the water supply. But the distribution of the disease corresponded very closely with the area supplied by this one company, and was not scattered as would have been expected if the water were responsible. In addition to this, Montreal in pre-war years learnt a lesson regarding typhoid epidemics from defective water systems, and since then the water has been above reproach. It is to be hoped that this epidemic will teach with equal thoroughness a lesson regarding the supervision of the city's milk supplies. One of the least foreseen results of the outbreak was the action of the United States in placing a temporary embargo on the import of milk from an area within a radius of 200 miles from Montreal, a measure which affected a very large dairy trade. This embargo was enforced until the United States health authorities were satisfied that steps had been taken to trace the origin of the epidemic and prevent its spread."

LISTER'S INTEREST IN TROPICAL MEDICINE.

SOME letters which have recently been sent to us by Dr. Manson-Bahr afford a striking instance of the wide interest taken by great men of science in matters beyond the scope of their own specialty. Lord Lister, with the many demands upon his few leisure moments, might have been forgiven had he not paid much regard to the subject of tropical medicine, especially at a time when this was, except perhaps to Sir Patrick Manson, a *terra incognita* to medical men in Britain, who were content to leave such things to those practising abroad. That he kept abreast with current literature, however, is clear from one of these letters, written in March, 1896, after the delivery of the first of Manson's Goulstonian Lectures on the life-history of the malarial germ outside the human body. The letter is concerned with the flagellation of the crescent to produce the male gamete which Manson had described. Lister said that the description suggested to him an analogy with the somewhat similar process in the spores of mycetozoa. "There is," Lister wrote, "nothing improbable in the idea that the flagella may be suddenly formed, and this seems to me more likely than that they existed ready formed in the spherical bodies. The mycetozoa, to which my brother has given great attention, produce spores which, when placed in water, give exit to amoeboid bodies which, after creeping about for a while as amoebae, put out each a single flagellum and then for a long time go on lashing this flagellum and at the same time feeding on bacteria or other appropriate nutriment, till at length they draw in the flagellum, assume a spherical form, and divide each into two, which again behave like the original one—first as amoebae and then as flagellated organisms. When watching the amoeboid form I have seen the flagellum quite suddenly protruded from the protoplasmic mass, undoubtedly a sudden fresh formation." Lister was elected President of the Royal Society in 1895, and in several of his anniversary addresses he made references to tropical diseases, both of man and of the lower animals, and their prevention. Another letter placed at our disposal, dated March, 1900, makes an appointment to call upon Manson to see some preparations, the nature and character of which are unfortunately not mentioned. But that he had not in the meantime lost sight of the progress of tropical medicine is evidenced by a letter from Manson to Ross, transcribed in the recently published *Life* of Sir Patrick Manson, in which (June 24th, 1898) it is stated that Lister came to Manson's house to see some of Ross's preparations adducing evidence in support of the mosquito-malarial theory; another communication from Lister to Manson three months later referred again to the same subject. In his last anniversary address as President (1901) he gave a

summary of the work of the Malaria Committee of the society appointed in 1888, and apologized for not being able to find time to refer to "various measures of prevention and treatment of malaria, which the light of recent knowledge has suggested, and which have already borne important fruit." The last of the personal letters before us (dated May 23rd, 1900) asks for information relative to the publication of Grassi's work, and ends with a personal expression of pleasure at Manson's election to the Fellowship of the Royal Society.

THE ROYAL ACADEMY.

THE exhibition which was opened on Monday last is not particularly striking. There is no picture in it of great outstanding merit or interest, and it may be considered to be no more than an average display of British art. There are probably fewer portraits than usual, and those which are shown are not of startling merit or glaring eccentricity. Of the royal portraits, that of the Queen by Mr. Jack takes the place of honour. Like the same artist's picture of the King, which was exhibited last year, it is a dignified and adequate presentment of its subject. The pleasing portrait of the King by Mr. Cope is on a smaller scale. Sir Hector Clare Cameron, Emeritus Professor of Clinical Surgery at Glasgow, has the unusual experience of having his portrait hung in two successive exhibitions of the Royal Academy. Last year he was represented by a characteristic picture by Mr. Maurice Greiffenhagen, and this year by one by Mr. George Henry, which has been presented by his colleagues, pupils, and friends in Glasgow. It is a good and lively likeness. This is the only portrait of a member of our profession in this year's exhibition. The portrait of Mr. Aldous Huxley by the Hon. John Collier is so interesting that we must regret that the hanging committee has not given us the opportunity of seeing the same artist's portrait of Mr. George Bernard Shaw. Those of us who are not familiar with the personal appearance of that sarcastic critic of the medical profession (and of most other institutions, human and divine) would have liked to see him as he appeared to Huxley's son-in-law, who has said in an interview that he painted him "as a kindly good-hearted fellow," and that he thinks it is his best portrait. We can well believe that Mr. Collier found his sitter congenial, for Mr. Bernard Shaw's cynicism and sarcasm need never be taken too seriously, even by the General Council of Medical Education. Large subject pictures, such as "The Doctor" of the late Sir Luke Fildes, are no more to be seen at the Academy, and rocks and waves and Highland and Lowland cattle are no longer conspicuous. There is, we think, a distinct tendency to exhibit more interiors, painted with the minute accuracy of the Dutch school of de Hoogh. A notable example is one of a room in Lansdowne House by Mr. van Anrooy, which suggests in some of its detail the work of Vermeer. Mr. Jack also has shown his versatility by painting two interiors in Buckingham Palace, which will be valuable, not only as works of art, but also as records of furniture and decoration. There are a number of other interiors, some of which are as charming as any Dutch master. Such is "The Landing," by Mrs. M. D. Elwell. There are not wanting beautiful landscapes, and we should like to live in a room with such a one as the brilliant "Pack Horse Bridge" of Mr. Sydney Lee. Perhaps there are fewer pictures than usual which, on account of their eccentricity, provoke the question, "Why on earth was that accepted?" There are, however, quite enough which do not appeal to the taste of the average visitor, whose spiritual home is not in Chelsea. There is a death of Adonis in which a faded Venus mourns an Adonis whose crimson-lake gore has escaped in very moderate amount from a wound on the *outer* side of the thigh. The bizarre tints of the landscape and the cream-coloured rabbits in the middle distance are equally probable. The two representations of Frothblowers do not seem likely to make good propaganda for that charity, and the Pool of Bethesda of Mr. Grieffenhagen is hardly consistent with a spirit of reverence for the Gospel. Such a Danaë as is exhibited in No. 720 seems hardly worth a shower of gold, and we note that she is only getting flower petals instead of authentic bullion. There are also a red Adam and a lilac Eve who would surely have frightened any serpent out of Eden, and a Francesca with an eighteen-inch neck. Last year we noted the possibility of Daltonism in the vision of some of the exhibitors ("Daltonism and the arts," BRITISH MEDICAL JOURNAL, July 3rd, 1926, p. 17), although we found no unequivocal evidence of that defect. This year there is less room for suspicion. Mr. Munnings, on whose work we last year remarked, still shows his remarkable fondness for green in shadows and his characteristic use of bright colours in unexpected situations. Among unusual subjects are the "Bottom of the Sea," by Mr. Fisher, and "The Enchanted Road," by Frank Salisbury. The latter shows a tree-bordered road lit up at night by the lamps of a motor car from which the view is seen. The sculpture is well up to the usual standard, and includes a good portrait bust of the Prime Minister by Mr. Newbury Trent. In the architectural room Mr. Alner W. Hall shows a drawing of the new Middlesex Hospital, a dignified red brick and white stone building which will be a great improvement on the old. Red brick is also to be used by Mr. Llewellyn in the new laboratories of the National Physical Laboratory at Teddington; and the new School of Pathology at Cambridge is to be housed in a dignified Queen Anne edifice, also in red brick, by Mr. Edward Warren. Messrs. Richardson and Gill show a drawing of the building in the classical style which is to be erected for the Department of Anthropology of University College, London. The main entrance of the Woolwich and District War Memorial Hospital is depicted by Messrs. Pitt and Son and Fairweather, who also show an attractive sketch of a building for a babies' home at Great Barr, in which evidently the value of fresh air and sunlight has not been forgotten.

THE DEFINITION OF BLINDNESS.

A NEW circular on the definition of blindness has been issued by the Ministry of Health. For the determination of the quality and quantity of vision for certain provisions made by the State for the blind it is necessary that members of our profession should be able to certify that the applicant for any particular benefit is blind—that is, using the words of authoritative direction, "too blind to perform work for which eyesight is essential." Certification has to be made when adults claim training in work suitable for the blind, and when claim is made for a pension for the blind. Both these provisions have some influence in the certification of children for admission into schools for the blind, since such a child is likely to require special trade training after school years if blind within the meaning of the Act. The words "too blind to perform work for which eyesight is essential" throws the onus of judgement upon the person who certifies the fact of blindness. It would appear that the Ministry of Health had found some inequality in the application of this definition, and therefore sought to qualify it in such fashion that there would be more uniformity and possibly less difficulty in certification. The Ministry, accordingly, went back to the report of the Ophthalmological Section of the Royal Society of Medicine of 1915, and adopted a sentence therein which indicated the possibility of some numerical definition, and it used this phrase as a basis for the desired qualification. The statement of the Ministry appeared in Circular 681, dated March, 1926. The critical

point of the circular was the suggestion that 6/60 should be the dividing line between economic blindness and sight—those with 6/60 visual acuity or less being blind, those with more than 6/60 being sighted. The publication of the circular brought a vigorous criticism of the numerical definition from Mr. Bishop Harman, who has had much to do with the blind as adviser to the London County Council and the National Institute for the Blind. He maintained that a numerical definition was unscientific, and in practice would not render certification more satisfactory, but the reverse. His paper appeared in the JOURNAL of May 29th, 1926 (p. 907). Since that date, we understand, close observation has been kept upon the character of the defects that have been the basis of certification in individual cases of alleged blindness. In consequence the Ministry has issued a further circular (780), which qualifies the previous Circular 681. It is stated that "the Blind Persons Act of 1920 has now been in operation for more than six years, and the Minister is advised that experience has shown that these criteria afford trustworthy guidance in determining whether a person is too blind to perform work for which eyesight is essential. A visual acuity greater than 6/60 with the most suitable glasses may therefore be regarded, in the absence of such counterbalancing conditions as great contraction of the field of vision, marked nystagmus, etc., as presumptive evidence that the person is not too blind to perform work for which eyesight is essential. But the degree of visual acuity should not be regarded as the *sole* [the italics are in the original] determining factor, and due consideration should, of course, be given to all the visual conditions. At the same time, it is essential that only the visual conditions should be taken into account, and other bodily or mental infirmities should be disregarded. The test to be applied is not whether a person is unable to pursue his ordinary occupation, or any particular occupation, but whether he is too blind to perform work for which eyesight is essential." It is further directed that all applications for approval of new entrants to a grant-aided service for the blind should be accompanied by medical certificates giving (i) the degree of visual acuity in each eye, (ii) the nature and extent of the visual defects, and (iii) "a definite opinion, formed after due consideration of all the visual conditions, that the person is too blind to perform work for which eyesight is essential." The determination of the state of vision of the greater number of applicants under these provisions for the blind is no easy matter, and the new Circular 780 recognizes that sound judgement and experience are needed. The whole stress is on the final paragraph quoted—"a definite opinion, formed after due consideration of all the visual conditions." Incidentally we might suggest that this new circular makes it imperative that ophthalmic surgeons should only furnish the required certificates upon "due consideration" by the local authorities of the professional labours of the doctors, for some authorities have erred in attempting to secure these opinions, either directly, or indirectly through charitable societies, without this due consideration for the doctor. It should be clearly understood that the responsibility for furnishing this opinion or certificate rests with the local authority, not on the blind person, nor any charity, nor on the Ministry. If doctors forget this then the fault will lie with them.

BETHLEM ROYAL HOSPITAL.

THE governors of Bethlem Royal Hospital have decided—and the decision appears to be final—to proceed without further delay with the erection of the new hospital on the site of over 340 acres which they have acquired at Monks Orchard, Shirley, near Croydon. It is now five years since the governors decided that the existing hospital was inadequate to meet modern needs. The present building was erected over a century ago, when the idea was to provide an institution for the care and maintenance of insane persons. Now large grounds with facilities for recreation and occupation have come to be considered necessary for the treatment of mental disorders, and the site in Southwark at present occupied affords no such opportunities. The original hospital of St. Mary of Bethlehem in London was founded as a religious priory in 1247 by Simon Fitzmary, a sheriff of London. By 1402 it had become a hospital for lunatics, and shortly afterwards it came under the protection of the City of London, and so continued until the Dissolution of the Monasteries, when the corporation of the City succeeded in securing a grant of the hospital and its revenues from the Crown. It was incorporated as a royal foundation for the reception of lunatics in 1547. The old building having proved too small, a second hospital was built in 1675 on the north side of London Wall, covering part of the site now occupied by Finsbury Circus. It must have been this that the *Man of Feeling* visited after objecting that it was "an inhuman practice to expose the greatest misery with which our nature is afflicted to every idle visitant who can afford a trifling perquisite to the keeper." His biographer, Henry Mackenzie, however, described how he "was overpowered by the solicitations of his friend and the other members of the party (amongst whom were several ladies); and they went in a body to Moorfields." There they saw first "the dismal mansions of those who are in the most horrid state of incurable madness. The clanking of chains, the wildness of their cries, and the imprecations which some of them uttered, formed a scene inexpressibly shocking." The party surprised their guide by bringing that part of their visit quickly to an end and going on to "that quarter where those reside who, as they are not dangerous to themselves or others, enjoy a certain degree of freedom, according to the state of their distemper." The present hospital was erected in 1815 upon lands belonging to the Bridge House Trust of the Corporation of London. When the move to the neighbourhood of Croydon was first suggested the City was ready to meet the wishes of the governors, but the London County Council put in a plea for part of the estate at Southwark to be reserved as an open space. The Council found support in the terms of an Act of Parliament, to which the governors had agreed some years ago, forbidding building on part of their grounds. The matter was finally settled through the generous offer of Lord Rothermere, who bought the grounds from the hospital for £155,000 and presented them to London as an open space. The hospital has given to the English language a noun—"Bedlam"—with various adjectives derived from it. The noun "Bedlam," according to the *New English Dictionary*, was first used as a general term for a lunatic asylum in 1663, but "Bedlamite," to mean a madman or lunatic, or an inmate of Bedlam or any lunatic asylum, was used by Burton in his *Anatomy of Melancholy* in 1621.

BAKER'S ITCH.

SOME stir must have been created in the forty thousand bakehouses in consequence of the receipt of the Home Secretary's Welfare Order, which came into force on May 1st. The requirements are of a simple nature (with interesting developments in one or two directions), requiring washing and cloakroom accommodation, a first-aid box, drinking water, and the posting up of a "Cautionary Notice as to the prevention and cure of dermatitis among workers handling flour and sugar." The medical inspectors

of factories have evidently come down on the side of the opinion that dough sticking to the skin is the *causa causans* of baker's itch, and in this view they have the support of Dr. A. C. Parsons, who made an inquiry for the Ministry of Health and the Home Office.[1] Thus, of 92 patients specially reported to him as suffering from the condition 60 had been employed in bakehouses where hand dough mixing was in vogue, 26 in machine dough mixing, and 6 where both methods were used, but 20 of the 26 attacked in the machine shops had been employed about the dough mixer or in moulding bread. Age is an important factor. In Parsons's cases the average length of service before attack was twenty-six years, and only too often relapse followed on resumption of work. In a placard issued by the Ministry this point is referred to in the following terms: "Delay in receiving treatment will certainly delay a cure, and the condition may become chronic. Early treatment can effect a cure in most cases. Go to a doctor for advice and treatment at the first signs of skin trouble." This question of relapse is also important from the point of view of the Workmen's Compensation Act, and has led to the addition of the italicized words in the Secretary of State's Order dated January 2nd, 1923:

> A person suffering from any of the diseases described in the Schedule as dermatitis produced by dust or liquids, ulceration of the skin produced by dust or liquids, and ulceration of the mucous membrane of the nose or mouth produced by dust, shall not be entitled to compensation under the provisions of the said section on account of the said disease if he is disabled only for employment in the particular process in which the disease has been contracted or other processes involving risk of the said disease, *unless the judge, committee or arbitrator is satisfied that the disease has been contracted through long-continued exposure to dust or liquids in the industry in which he was engaged at the time of his disablement.*

In a factory the "hands" of a workman whose sleeves are habitually rolled up extend as far as his elbows. Hence no washbasin is to be regarded as satisfactory which does not allow both forearms, including the elbows, to be immersed simultaneously. This is recognized for the first time in the Welfare Order; the dimensions of the "lavatory basin or trough" are fixed at "not less than 20 inches long and 7 deep." The quality of mercy to be conferred by this utensil will, however, be considerably strained, as one only has to be provided for *ten* persons. Will the tenth man wait the inevitable fifteen minutes for his turn?

VITAL-STATISTICAL FACTS NOT GENERALLY RECOGNIZED.

AN excellent leading article in the *Times* of May 2nd, following upon a telegram from its Paris correspondent on the French census, called attention to a fact which is not so well known as it should be. We are so accustomed to hear about the low birth rate of the French that it is something of a shock to realize that the French birth rate is appreciably higher than the English; in 1926 the rate in France was 18.8 per 1,000 of population, in England and Wales 17.8. But although some seventy thousand more babies were born in France than in England and Wales in 1926, the excess is reduced to little more than twenty-six thousand if account is taken of the higher rate of infant mortality across the Channel. The present General Report on the Census of 1921, of which we gave some account a fortnight ago (April 23rd, p. 770), contains many other instances of what are, at first sight, unexpected results. Thus probably most people would suppose that the most striking effect of the war upon vital statistics of belligerent countries would be to reduce the proportion of males aged 20 to 40 in their populations in comparison with those of non-belligerents. This is not so; at the 1921 census 14.2 per cent. of the population of England and Wales consisted of males aged 20 to 40, 13.8 per cent. of the population of Germany (census of 1919), and 14.6 per cent. of the population of Austria (1920). The neutrals, Denmark, Holland, and Spain, had respectively 14.3 per cent., 14.8 per cent., and 13.7 per cent. The explanation is that the indirect effect of the war upon the birth rate was, numerically, more important than its direct effect upon adults. If we take the proportions of children under 5, we have for England and Wales 8.7 per cent., for Germany 6.3 per cent., for Austria 6.3 per cent.; Denmark had 10.5 per cent., Holland 11.4 per cent., Spain 10.6 per cent. Another possibly unexpected result is that in some of the "dormitories" of London the daily movement outwards of bread-winners is almost or completely counterbalanced by the inward movement. Thus in Acton the population (expressed as a percentage of the night population) working outside the urban district is 21.8, while the population living outside the district and working in it similarly expressed is 24.5. There is an inward balance. The same holds for the borough of Richmond and for Erith. The outward balances at West Ham, Enfield, Hendon, and Kingston-on-Thames are quite small.

[1] *Journal of Industrial Hygiene*, 1924, vol. v, p. 411.

THE DOGS' PROTECTION BILL.

THE Dogs' Protection Bill, the full title of which is "A Bill to Prohibit the Vivisection of Dogs," was, when it came on as the last order of the day in the House of Commons on Friday, April 29th, talked out by its supporters. It is true that under the rules of the House they had not much time, but they only left Dr. Fremantle one minute to indicate the nature of the opposition. Sir Richard Luce was ready to continue, but the debate, as has been said, was abruptly brought to an end by the operation of the time rule. The speeches of the mover and seconder are reported in our Medico-Parliamentary columns. Apparently nothing more can be heard of the bill in the House of Commons this year, but it is thought probable that Lord Banbury will raise the subject on a motion in the House of Lords.

WE deeply regret to announce the death of Professor E. H. Starling, F.R.S., which took place on May 2nd on board the *Ariquani*, outside Kingston, Jamaica, where he had gone for the benefit of his health, which had been for some time unsatisfactory. He was Jodrell professor of physiology at University College, London, from 1899 to 1923, when he became Foulerton research professor of the Royal Society, and continued to work in the Physiological Institute of University College. We hope to publish a biographical note in an early issue.

THE next annual meeting of the British Association for the Advancement of Science will be held in Leeds from Wednesday, August 31st, to Wednesday, September 7th. The President is Sir Arthur Keith, M.D., F.R.S., conservator of the museum of the Royal College of Surgeons of England. The president of the section of physiology is Dr. C. G. Douglas, C.M.G., F.R.S., Fellow and Lecturer in Natural Science, St. John's College, Oxford; of the section of psychology, Dr. William Brown, Wilde Reader in Mental Philosophy in the University of Oxford, and lecturer in psychotherapy, King's College, London; and of the section of anthropology, Mr. F. G. Parsons, F.R.C.S., professor of anatomy in the University of London (St. Thomas's Hospital). Further arrangements will be announced later.

QUEEN CHARLOTTE'S HOSPITAL.

PLANS FOR EXTENSION.

AN urgent appeal has been issued by the governing body of Queen Charlotte's Maternity Hospital and Training School for £250,000 to erect, equip, and endow an extension of the present building. It is proposed to provide new wards containing a total of seventy-five beds; some private wards for paying patients; pathological laboratories, with special accommodation for the investigation of puerperal fever; better facilities for education in obstetrics and gynaecology; and more adequate arrangements for the housing of maternity nurses. Queen Charlotte's Hospital was founded in 1739, and was rebuilt in 1854; a new wing was added in 1886, and further enlargement was provided in 1898, when also the present nurses' home was built. Ten years later extension was again found necessary. Although the present accommodation of the hospital is only seventy-five beds, it is no exaggeration to say that its fame as an educational institution is world-wide. For a long time it has been realized that the hospital is seriously inadequate for the clinical and educational demands which are being made upon it; only ten confinement cases can be dealt with each day in it and a very large number of applicants for admission have to be refused annually. The urgency of the situation has been fully recognized by King Edward's Hospital Fund and the Ministry of Health, and financial assistance has been promised.

In connexion with the appeal a statement has been issued by the following eleven consulting surgeons: Mr. J. Bright Banister, Mr. Aleck W. Bourne, Mr. Trevor B. Davies, Mr. T. Watts Eden, Mr. W. Gilliatt, Mr. C. S. Lane-Roberts, Mr. Leonard Phillips, Mr. Louis Carnac Rivett, Mr. Thomas G. Stevens, Mr. Clifford White, and Mr. Leslie H. Williams. Looking wider than the immediate requirements of Queen Charlotte's Hospital they draw attention to the urgent need for increasing hospital accommodation for midwifery in Great Britain and for improving the training of medical students and midwives. In this connexion we may remind our readers that, in the first issue of the BRITISH MEDICAL JOURNAL in 1926, Mr. Comyns Berkeley made a moving appeal in an article entitled "Save the women and children," emphasizing in particular the educational, ante-natal, intra-natal, and post-natal aspects of the campaign against the present serious maternal and infantile mortality. In their statement the eleven consulting surgeons indicate how the inadequacy of the facilities for watching and treating women during the critical times of pregnancy, labour, and the puerperium has militated against the training of medical students and nurses in midwifery, a deficiency which does not exist to anything like the same extent in other parts of the medical curriculum, and is unquestionably related to the present high and undiminishing rate of maternal mortality and morbidity in this country. They attribute this lack of hospital accommodation to the fact that the maternity charities have not made such great appeals for funds as other medical charities, and have, therefore, attracted less attention. In consequence of this the processes of child-bearing are not generally recognized as being potentially dangerous, or as requiring medical attention, except in cases of emergency. Moreover, they add, the science of obstetrics has been erroneously regarded as a minor branch of medicine, whereas it is at least equal to, if not more important than, medicine and surgery, since every general practitioner must be ready at all times for the emergencies of midwifery, with which he will often have to deal single-handed. It cannot be denied that there is a seriously inadequate accommodation for the large number of women who require expert assistance in labour, especially those pregnant for the first time, and there is also very insufficient provision for the diseases of pregnancy. Most of the available beds are required for women in labour and the puerperium, and so it is very difficult to deal with those who need treatment, rest, and nursing during pregnancy. The increasing recognition of the importance of the ante-natal care of pregnant women, as one of the most valuable branches of preventive medicine, has, as yet, received insufficient practical recognition. Moreover, there are hardly any beds available for the systematic study and treatment of puerperal fever, which is the chief single cause of death in childbirth, and in 1925 was responsible for over 1,100 fatal cases; hardly any diminution in this mortality has occurred during the last fifty years. The maternity hospitals and the general hospitals cannot admit cases of puerperal sepsis, although other acute fevers are now dealt with by experts. The inadequate educational facilities for students contribute further to the high death rate, and result too often in a legacy of maternal ill health, disability, and economic inefficiency. In the new extension of Queen Charlotte's Hospital about twenty-five beds are to be set apart in an isolation flat for the treatment and investigation of puerperal sepsis, and it is hoped that in this way a campaign may be initiated with benefit to the whole country. Some beds are also to be allocated for the treatment of ante-natal conditions. In further support of the appeal the eleven surgeons state that about 4,000 women are delivered annually by Queen Charlotte's Hospital. In 1926 the hospital was closed on forty-six days to further admissions because all beds were occupied. In commending this appeal to the consideration of all who can further it, particularly by impressing on the general public this great need of the present time, we may perhaps only add that such an example is likely to stimulate all parts of the country to parallel efforts; it is perhaps not too much to hope that a new era in the prevention of disease is being opened.

THE SPAHLINGER TREATMENT.

REPORT OF THE MEDICAL COMMITTEE OF THE WELSH NATIONAL MEMORIAL ASSOCIATION.

IT was reported in the JOURNAL of April 30th that the last quarterly meeting of the council of the Welsh National Memorial Association, held at Chester, had before it a report from the Medical Committee on the Spahlinger serums and vaccines; a brief outline of its conclusions was then given, but it will be of interest to add some further details. The presentation of the report led to some discussion, and eventually it was resolved that it should be received, but that a special meeting of the council should be held at Shrewsbury during May, when all the issues raised should be gone into and a definite pronouncement made by the Memorial Association concerning the Spahlinger remedies.

The Medical Committee stated that it had met on three occasions, and had considered reports from the Clinical Subcommittee, from the Bacteriological Subcommittee, from the General Purposes Subcommittee, and from certain members of the staff of the Memorial Association who went to Geneva in May, 1926. These reports were presented to the council, but have not yet been issued for publication. The Medical Committee submitted to the council the following observations as its general conclusions:

GENERAL CONCLUSIONS OF THE MEDICAL COMMITTEE.

In approaching the question of the "Spahlinger treatment" it is advisable to draw a distinction on the one hand between the bacteriological and clinical aspects of the problem with which M. Spahlinger is himself chiefly connected, and the appeals for funds for financing the work of the Spahlinger Institute on the other.

(a) Technical.

While it is evident that M. Spahlinger has created a modern laboratory at Carouge, and has shown much ability in devising apparatus for special branches of bacteriology, the secrecy maintained as to fundamental details of technique renders it almost impossible to judge of the value of his work. He claims to have made achievements far in advance of modern knowledge, but has, up to the present, produced no adequate evidence in substantiation of these claims. Whether from technical or financial reasons, it is clear that all attempts to obtain supplies of the Spahlinger preparations for systematic tests by competent authorities have failed.

(b) Clinical.

The published records and statistics of the cases treated by the Spahlinger remedies are not nearly complete or precise enough to allow of a scientific evaluation of the results of treatment. Based on such evidence and records as are

available these results are inconclusive. In those cases where the results are good these can easily be paralleled by other methods.

The report made by certain members of the medical staff of the association, after their visit to Geneva, on cases actually examined and investigated by them, shows that in this series the results are, on the whole, disappointing, especially in view of the claims made. The remedies obviously do not offer a "certain" cure for tuberculosis, and conclusive evidence has not been forthcoming that they have materially altered the course of the disease.

With regard to the advisability of undertaking organized clinical tests, we feel that M. Spahlinger's preparations are on exactly the same basis as any other unproved remedy. There is some, but not conclusive, evidence to justify such tests, if only because in a few cases there was considerable improvement during the period of treatment. We can but reiterate the attitude adopted by the council in its resolution passed on April 23rd, 1926, as follows:

> "That in view of the fact that M. Spahlinger has promised supplies of his remedy to the Ministry of Health for investigation, and that the material will be placed at the disposal of the Ministry in the first instance, who have promised to make a full investigation (in which the association may probably be asked to participate), it will be well for the association to await the inquiry promised by the Ministry.
>
> "In the event of the association being invited so to act, that they accept the terms and conditions of the Ministry in regard to such inquiry, provided that full information as to the nature and strength of the remedies be given in confidence to the medical staff."

(c) General.

The application of public or other funds towards the Spahlinger Institute cannot be recommended by this committee.

The publicity campaign on behalf of the Spahlinger movement is to be deprecated as unjustified by the evidence so far adduced and to be deplored as raising false hopes in the minds of sufferers from tuberculosis.

England and Wales.

THE MAYOR OF EXETER.

MR. RANSOM PICKARD, M.S., F.R.C.S., who is this year mayor of Exeter, was entertained at dinner on April 26th by members of the profession in Exeter and the neighbouring parts of Devon. The event was, we believe, unique in the long history of the mayoralty of Exeter, which can be traced back for some seven hundred years.

The chair was taken by Dr. Gordon, who was supported by Colonel Soltau, C.M.G., C.B.E. (who commanded the 2nd Wessex Field Ambulance), Dr. Vlieland (an ex-mayor), Professor Campbell, Colonel Mawhinny, Colonel Thornton, and Colonel Harper. In all seventy-one medical practitioners were present, amongst whom were a considerable number of lady practitioners, but the only non-medical person present was the mayoress. The Chairman, in proposing the health of the guest, recalled that Mr. Pickard was appointed commanding officer of the 1st Wessex Field Ambulance in 1908; he raised that unit and immediately set himself to perfect it and prepare it for active service should necessity arise. In 1910 he was promoted lieutenant-colonel. When the war broke out the three Wessex Field Ambulances (1st, 2nd, and 3rd) were in such a high state of efficiency that they were chosen as the first Territorial units to be sent on active service; they crossed with the 8th Regular Division, went direct to the front opposite Neuve Chapelle, and took part in the first battle of Ypres, thus qualifying for the Mons Star. The 1st Wessex was engaged in all the Flanders fighting from then on until it moved to the Somme in April, 1916. Amongst the set battles were those of Neuve Chapelle, Aubers Ridge, and the holding attack in conjunction with the battle of Loos. The ambulance was engaged in the opening stages of the Somme battles, and the depleted division was then sent back to the Somme. It was one of the three English units upon which the French later on conferred their Croix de Guerre for heroism, another of the three being the 2nd Devons. In July, 1917, Colonel Pickard was promoted A.D.M.S. of the 48th Southern Midland Division, holding this post until demobilization in April, 1919. After his promotion he saw further fighting both in France and Italy. In the winter of 1918-19 he was engaged in repatriating English and Italian prisoners of war from Bavaria and the Tyrol. After the war he was appointed A.D.M.S. of the Wessex Division, and held that post until 1921. In addition to receiving the Mons Star with clasp, Colonel Pickard was mentioned five times in dispatches and was awarded the C.B. and the C.M.G. For his services to the Italian Government he was given the Croce di Guerra. Dr. Gordon drew especial attention to the fact that it was due to Colonel Pickard's urgent representation that sterilizers were added to the equipment of field ambulances—an addition which proved to be of the utmost value. In conclusion, Dr. Gordon referred to the services Colonel Pickard had rendered to the city, formerly as sheriff and now as chief magistrate, and alluded to his munificent support of the university of the south-west. It is needless to say that the toast was drunk with enthusiasm and with many cheers for both the mayor and mayoress.

An album containing an address signed by all those who attended the dinner was then presented to the mayor as a memorial of the occasion.

Colonel Pickard, who was evidently much affected by the reception given him, and by the presentation of the album, replied, thanking his hosts for the great and signal honour paid him.

The reading of a selection from the long list of apologies for non-attendance, including one from the Right Hon. Christopher Addison, M.D., and another from Mr. Lewis Mackenzie, F.R.C.S., the chairman of the Health Committee of the Devon County Council, concluded the official part of the function, and brought a very happy evening to a close.

STATISTICS OF THE EAST END LYING-IN HOME.

The clinical report of the East End Mothers' Lying-in Home covers the two years 1925 and 1926. The hospital has 56 beds, and patients are also attended in their own homes. Patients who apply for admission, or to be attended at home, are accepted without any selection. Much of the information in the report is given in tables, in the preparation of which the recommendations of the subcommittee of the Obstetrical Section of the Royal Society of Medicine have been followed as far as possible. In the total of 4,291 deliveries there were no Caesarean sections or embryotomies, and the forceps rate was 2.5 per cent. In 1925 there was one case of eclampsia; recovery was uneventful. The puerperal morbidity was low, the combined rate in the home and district being 1.7 per cent. for the two years. The figure for the district alone was even lower. In 1925 there were three maternal deaths, in 1926 only one, thus giving a maternal death rate of 0.94 per 1,000. The rate for the last ten years was only 0.66 per 1,000. The stillbirth rate was 2.55 per cent., and that for neo-natal deaths 1.18 per cent. Of 2,265 babies born alive, 30 died and 27 failed to regain their weight at birth. The attendances at the ante-natal clinic totalled 5,691, and 1,013 visits were made to the honorary medical officers' clinic. No deductions are drawn in the report itself, but it would appear that this high rate of attendances at the ante-natal clinic had had a direct effect on the health of the mothers and babies. A very commendable report of excellent work.

BRISTOL ROYAL INFIRMARY.

At the annual meeting of the Bristol Royal Infirmary on April 6th, an urgent appeal was made by Colonel P. G. Robinson, D.S.O., president of the board of governors, for increased financial support, with a view to reducing the debt of £78,000, and so preventing the restriction of work which would otherwise become necessary. Since 1735 this institution has been prominent in medical treatment and research, and during the last three years building operations have resulted in considerable enlargement of its activities. Recent additions and improvements include the erection of the Herbert Henry Wills Nursing Home; reconstruction of the out-patients' department; the rebuilding and equipping of the isolation ward, and the *x*-ray, massage, dental, and laundry departments; and the improvement of the heating system of the whole hospital. During 1926 the number of patients treated in the wards

was 7,229, compared with 7,031 in the previous year, while 64,754 out-patients were dealt with. The expenditure increased by £2,322 to the sum of £63,940, and the president mentioned regretfully that there had been a considerable decrease in the subscriptions, the ordinary income of the year amounting only to £44,738. He said that about £9,000 of the expenditure was attributable to the rebuilding work and would not recur. It was announced that two promises of donations, each of £5,000, had been received towards reducing the debt, and another gift of £1,500 was presented at the meeting for the endowment of a bed. In the annual report for 1926 it is stated that a cancer research committee has been formed, and a special appeal is made for £10,000 for the Cancer Research Fund.

Paddington Green Children's Hospital.

A special department has been opened at the Paddington Green Children's Hospital for the medical supervision of children with rheumatism and heart disease. It is hoped to obtain information about the etiology of these conditions locally, and also to prevent their more serious results. This work will be facilitated by the fact that rheumatism in children has been made a notifiable disease in Paddington. At the annual meeting of the hospital it was reported that 819 in-patients had been admitted during 1926, and that 9,951 new out-patients had been dealt with. There are still no cots in the hospital available for the special departments, such as those of the ear, nose and throat, eye, and skin. In consequence, an appeal is being made for £50,000 to defray the cost of an extension of the hospital which it is proposed to erect. There was a decrease in the total income from all sources during 1926 of nearly £3,000, as compared with the previous year; £1,018 was received from the payments of patients.

Scotland.

Scottish Universities Representation.

The Parliamentary vacancy in the Scottish Universities constituency, caused by the death of the Rt. Hon. Sir Henry Craik, has been filled by the election of Mr. John Buchan, the well-known Scottish novelist and historian. Mr. Buchan (Unionist) received 16,963 votes as against 2,378 for his opponent, Mr. Hugh Boyd Guthrie (Socialist), who, therefore, having received less than one-eighth of the whole number of votes, forfeits his deposit. The new member of Parliament was educated at Glasgow University and at Brasenose College, Oxford, was called to the Bar in 1901, and for two years acted as private secretary to Lord Milner when High Commissioner for South Africa. In 1916 and 1917 he was on the headquarters staff of the British Army in France, with the temporary rank of lieutenant-colonel. He is a member of the publishing firm of Messrs. Thomas Nelson and Sons, and is a trustee of the National Library of Scotland.

Aberdeen Hospitals Scheme.

A public meeting was held in the Cowdray Hall, Aberdeen, on April 22nd, at which Lord Provost Lewis presided. A motion regarding the new hospital scheme was proposed by the chairman that the directors of the Aberdeen Royal Infirmary, one of the participating bodies in the Aberdeen Joint Hospitals Scheme, should be authorized to acquire forthwith the part of the Forrêsterhill site allocated to the Infirmary under the scheme and to take all necessary steps towards the erection of a new Infirmary thereon. The Lord Provost mentioned that the joint hospitals scheme was a combination of all the hospitals of the city, including the Royal Infirmary, the Royal Hospital for Sick Children, the Maternity Hospital, the public health department for tuberculosis, and a portion of the University as a teaching centre. It was proposed to appeal to the citizens of Aberdeen and the surrounding counties, as well as to Aberdonians throughout the world, to raise a sum of £400,000. He knew that the appeal would be successful, for they had already in hand £212,000 before the appeal was issued. He had gone into the cost of that part of the scheme which concerned the Royal Infirmary, and it was believed that the work could be carried out for approximately £500 per bed, fully equipped, which would mean that the Infirmary section would cost about £257,000. The proposal was seconded by Colonel Frank Fleming, supported by Sir George Adam Smith and Professor Ashley Mackintosh on behalf of the University of Aberdeen, and was unanimously adopted.

An Octogenarian M.O.H.

Dr. James Gairdner, who recently completed his sixtieth year in practice, has been medical officer of health to the parish of Crieff for thirty-nine years, and the parish council recently recorded in its minutes its appreciation of Dr. Gairdner's long and faithful services and made a small increase in his salary. As Dr. Gairdner's father started practice immediately after qualifying in 1828, the father and son between them have practised continuously for ninety-nine years. In communicating some of the facts to us Dr. Gairdner notes that in the past thirty years there has been a great decrease in the rural population, and that the birth rate is now 10.1 instead of 30. At the same time the number of medical practitioners, and the hospital and nursing facilities, have increased, and it is no longer possible, as it once was, to get an indoor assistant for £40 a year. The doctor has ceased to visit his patients in a surtout and a tall silk hat; and a round of fifty miles a day is no longer done on a saddle horse. From Dr. Gairdner's experience we must conclude that the life of the medical practitioner is not so strenuous in these days of motor cars as it was during last century.

Mental Defectives in Scotland.

A public meeting was held in Glasgow on April 28th for the purpose of explaining the scheme for the new colony in connexion with the Royal Scottish National Institution at Larbert, Stirlingshire, which is designed for the whole-of-life care of mental defectives. Lord Provost David Mason presided, and the principal speaker was the Right Hon. Sir John Gilmour, M.P., Secretary of State for Scotland. The chairman said that only after the middle of last century had Scotland awakened to the necessity of providing for the treatment of mental defectives, and the institution at Larbert was then promoted. The Mental Deficiency and Lunacy (Scotland) Act of 1913 had been a further step in this direction. Sir Alexander Gracie, chairman of directors of the institution, speaking of its history, said that the institution had begun sixty-five years ago in Edinburgh, and had been increased from time to time till now the buildings at Larbert were licensed to accommodate 500 juvenile defectives. As the inmates were discharged at the most critical period of their life, it was now considered that something must be done to arrange for their permanent care. Sir John Gilmour said that among his many duties was that of dealing with problems connected with individuals who transgressed the law and came into prison. It was common for the same person to get into difficulties over and over again, and anyone who held his office must come to feel that many of these unfortunate people had offended against the law, not so much from malice, as from lack of intelligence. In other words, many criminals were really mental defectives. The work which the Larbert institution did at the present time dealt with children, and it had become an increasing calamity that the State or the charity of well-to-do citizens did not take cognizance of the problem which arose when they were discharged at an age which was the most difficult even for those who were fully endowed. Unless these individuals were carefully supervised and cared for, either in their homes or in some employment, all the good work of the training that they had received might be lost. The speaker thought that sometimes the words "permanent care" were used mistakenly. They gave the public the impression that children once put into such institutions were to be kept there for ever, but that was not so, for every one of the cases was reviewed and carefully examined with the hope and object of giving them an opportunity of going out under careful supervision and becoming good citizens. Greater progress had been made in England than in Scotland to deal with this problem.

Correspondence.

LORD LISTER IN HUNGARY.

SIR,—Lord Lister visited Hungary in the summer of 1883 for the purpose of spending a holiday in the High Tátra. He was delayed a week at Pozsony by rheumatism in his arms, but by September he had fully recovered, and, accompanied by Lady Lister, he toured the hills and valleys and caves of the Tátra region and passed some time in botanizing. Towards the end of September he arrived in Budapest, where he stayed for three days in inspecting the libraries, museums, and hospitals of the Hungarian capital. He witnessed with interest the operations performed by Tauffer and Alexander Lumnitzer. At a banquet given in his honour, Ministerial Councillor Louis Markusovszky proposed a toast to the distinguished guest. The students of the university filed before him in a torchlight procession, and Michael Lenhossék, at that time a medical student, to-day professor of anatomy, addressed him in a speech of welcome. Lord Lister, replying, emphasized the "Eifer für unsere Kunst" of the young men.

Lord Lister subsequently visited Balatonfürd, and left our country with the reputation of a true friend of Hungary. He repeatedly expressed himself as such. He was acquainted with the work of Semmelweis only through reading the book of Theodor Duka; consequently, as he himself stated, he could not influence the activities of the former; though as soon as he was cognizant of the facts he recognized the importance of the work and was filled with admiration for it.

Semmelweis in 1847 discovered the cause of puerperal fever and also the mode of its prevention, thereby establishing his just claim to be one of the most illustrious benefactors of humanity. He died in 1865, before the importance of his invaluable discovery was generally known and appreciated. On September 30th, 1906, a statue of this eminent physician was, by international subscription, erected at Budapest, the subscription being opened in Great Britain by a committee, of which Sir Spencer Wells was chairman. This committee was elected at a public meeting convened in 1892, at which Sir Andrew Clark, Bt., presided. Lord Lister was a member of the committee, and expressed his profound regret at his inability to be present at the solemn inauguration of the monument, owing to illness. Great Britain would have been represented by Sir William J. Sinclair, but at the last moment he was prevented by unforeseen obstacles; he, however, wrote as follows:

> "Semmelweis seized the truth, hence the triumph of his 'Lehre.' It required the work of Pasteur and Lister to make it fully effective, but that human thought and experience have made some progress during the last half-century does not diminish the glory of Semmelweis."

Hungary, the land which gave birth to Semmelweis, has always held in affectionate veneration the memory of both Pasteur and Lister.—I am, etc.,

EMILE DE GRÓSZ, M.D.,
Professor of Ophthalmology at the Royal Hungarian Petrus Pázmány University in Budapest.
Budapest, April 26th.

RHEUMATIC INFECTION IN CHILDREN.

SIR,—I think the medical profession, and especially those interested in the care of children and in cardiology, must be gratified at the interest which is being evinced by the British Medical Association in the care of the "rheumatic child," and will welcome the report with recommendations which has been prepared by the special committee of the British Medical Association and was published in the SUPPLEMENT of the BRITISH MEDICAL JOURNAL of April 16th.

We in Glasgow can speak from experience of the value of such an organization as outlined in the report, since at the Royal Hospital for Sick Children, Glasgow, there has been in full activity a so-called "cardiac clinic" for now over three years. To this clinic there are brought periodically all cases of rheumatism which have passed through the hospital, but, unlike what is suggested in the British Medical Association report, treatment as well as advice is dispensed, and unless this is done we are inclined to consider the scheme futile. Medicinal treatment, hospital residence, or convalescence in the country are provided as necessary, and we do not find that in this way we come into conflict with the medical practitioner. Details of the scheme, with a record of the first two years' work, were published by Dr. Lowenfeld in the BRITISH MEDICAL JOURNAL of May 8th and 15th, 1926. It might be of interest to note that we were prompted to institute the work as the result of an analysis by Dr. Mary Bertram of examples of rheumatism in all its manifestations admitted to the Royal Hospital for Sick Children, Glasgow, and which was published in the BRITISH MEDICAL JOURNAL of March 14th, 1925. We were, of course, familiar with the work that was being carried on in America.—I am, etc.,

Glasgow, W., April 30th. LEONARD FINDLAY.

SIR,—It is a very great pleasure to find in the British Medical Association's second report on the prevention and control of rheumatic infection in children (SUPPLEMENT, April 16th, p. 121) so whole-hearted a recommendation of the supervisory method of attack on the problem, put forward by me in your number of May 8th and 15th, 1926 (p. 817). It is also very encouraging to find the term "quiescent stage," used in my paper to define the period between attacks, definitely adopted by the committee, and its crucial importance for the combat of the disease so authoritatively taught.

Where almoners' assistance is adequate, the working of a clinic of this kind is a matter of great interest. Now that the method has the endorsement and recommendation of the subcommittee it should be the warm hope of all connected with the welfare of rheumatic children that it will find wide adoption.

Cordial co-operation with the school and public health bodies has been the mark of this work from the beginning. While it is clear that from an ideal standpoint the work is best done in connexion with a well equipped hospital, yet, with cordial co-operation with existing public bodies, a clinic can also be satisfactorily carried out at a suitable dispensary. An experiment of this kind is in operation now in Marylebone.*

One point remains for consideration, and it would be of particular value to have opinions upon it from all the workers concerned. This is the system upon which the classification of the children attending these centres is to be carried out. Two possibilities present themselves. One, the employment of the textbook terms of description of the disease—chorea, acute rheumatic fever, subacute rheumatic fever, etc. This has the merit of being familiar and in accordance with a great deal of work already done; but the use of it has also a very strong disadvantage. For clinics of this kind are, after all, concerned with the practical problem of the ultimate health of the child. The enemy to this health, it is universally agreed, is, not chorea or acute rheumatic fever, but the heart disease that results from them. The form or severity of the rheumatic complaint, unfortunately, bears no relation at all to the degree of cardiac involvement. A classification, therefore, based on the form of disease offers no assistance whatever to the practical problems of the running of a clinic or the appreciation of its results. It has also the further disadvantage of necessitating the addition to each case report of a somewhat lengthy note on the cardiac condition.

The alternative to this method of classification is to ignore altogether, except for the purposes of cross-reference, the form of the disease, and to classify the children according to their cardiac history. For this purpose the letters A, B, C, D are used, each referring to a carefully defined entity. Under these letters the children are grouped on registration, and they are moved from one to other of them according as they improve or deteriorate.

This classification was devised for the original clinic, but was not in itself original. A similar system of classification, from which this was modified, has been in use for a considerable time in the United States of America and has proved satisfactory. I am convinced that in any

* Children's Cardiac Clinic, St. Marylebone General Dispensary.

programme for the organized care of the rheumatic child the question of classification is fundamental. It would be of great value to have this matter considered by those responsible for the welfare of rheumatic children. The adoption of a roughly uniform system would make the results of all workers more easily comparable and available for the study of the disease. It is unfortunate that in this report Dr. Miller does not give any hint of the classification upon which the work of his supervisory centre is carried out.

Since the awakening of interest in this problem considerable progress had been made. Now that the principle of supervision is conceded, were some uniform programme to be devised by which the ground-plan of the supervision could be carried out, in a short time a sufficient quantity of comparable material would accumulate to make possible a significant step forward in our understanding of the disease.—I am, etc.,

London, W.1, April 15th. MARGARET F. LOWENFELD.

SIR,—I have read with interest the second report of the Science Subcommittee (SUPPLEMENT to BRITISH MEDICAL JOURNAL, April 16th), and am glad to see that the significance of the "quiescent" stage of rheumatism, first noted, I believe, by Dr. M. Lowenfeld in the JOURNAL (May 8th and 15th, 1926), is now becoming recognized. It is, however, somewhat disappointing for those engaged in the campaign against rheumatism in children to find how scanty are the indications as to the lines to be adopted in dealing with patients who come under supervision.

Although the report is admirably headed "Prevention and Control," rheumatism is considered therein solely from the viewpoint of "a systemic infection." Prevention of an infective disease can be considered along lines dealing with the specific infective agent, as is possible in diphtheria, syphilis, and typhoid, for example. It may be said, however, that up to now no single organism has obtained universal acceptance as being causative of rheumatism. Hence, as a practical issue, prevention of *infection* is not possible. In this regard all that has so far been suggested has been the amelioration of certain very general circumstances assumed by default to be associated with the lodgement of an infective agent, and all the measures advocated in this report, if critically examined, recommend forms of treatment of already existing disease, so that it is difficult to glean from it any indications as to prevention.

It is, of course, true and universally accepted that the problem of heart disease in childhood is primarily a rheumatic one, and all modern work, both here and in America, is based on this conception; nevertheless, having thus far advanced, the report is silent as to the essence of what constitutes a rheumatic child. In the section on "treatment clinics" it is admitted that, while the ideal is to catch the rheumatic child before he has become cardiac, yet the *aim* of the work is prevention of subsequent cardiac affection. It should, however, be clear that attention must be concentrated upon the rheumatic child in the attempt to discover what constitutes the real nature of rheumatism, whilst at the same time all possible endeavours must be made to prevent the development of heart disease in this type of child, the recognizable infective agent taking its natural place as an incidental and secondary exacerbation.

That such an angle of attack is both practicable and advantageous is already in course of demonstration in my clinic at the St. Marylebone General Dispensary. This is admittedly an experimental effort, but an effort in which, as reference to the annual report will show, all three points with regard to the nature of the disease—namely, (1) rheumatic predisposition, (2) infective agent, (3) cardiac dangers and disabilities—are equally taken into account.—I am, etc.,

London, W.1, April 18th. J. F. HALLS DALLY.

SIR,—I should like to state what I believe to be the main cause of attacks of acute rheumatism, leading to heart disease, in children. These attacks have undoubtedly increased in number very greatly in the last few years, and, as Dr. Carey Coombs points out, they most often occur between the ages of 5 and 15. This is the school age. From personal observation I have found out that after a child has started in the county council schools it is afraid to stay away from school, even if it has a severe cold or chill, because the teachers make it most disagreeable both for the child and its parents, and harass them with multitudes of questions as to the reason of the absence, and suggest dire consequences if it occurs again. Very many children have had their health ruined for life by attending school when they were unfit to do so, egged on either by fear of consequences or the desire to obtain a medal for regular attendance. When I was medical examiner to the Technical Education Board of the London County Council I found many children who had acquired endocarditis or myocarditis from that form of rheumatic infection commonly known as "growing pains." They had attended school regularly, even if the pains were severe. In my experience rheumatic infection is comparatively rare in the class of children who attend private schools, and whose parents keep them at home if they have colds or chills.

If teachers were instructed to encourage parents to keep their children at home when they had colds or chills, and if the danger of sending them to school in this condition was explained to them, and medals for regular attendance were abolished, I believe that in a year or two the number of children with wrecked lives due to rheumatic infection and heart disease would be very materially decreased. The fetish of "regular attendance" and the desire of the teachers for the greatest number of their pupils to pass examinations well, and consequently give the school a good standing, are responsible for many victims of rheumatic infection. It is well to do all we can for these poor victims when they have succumbed to the fetish, but better still to pull down the fetish and thereby greatly reduce the number of victims.—I am, etc.,

London, W.1, April 22nd. LESLIE THORNE THORNE, M.D.

TESTING FOR OCCULT BLOOD IN FAECES.

SIR,—I have read with interest Dr. A. G. Ogilvie's article on "Testing for occult blood in faeces" (April 23rd, p. 755) dealing with alleged fallacies. In 1903 Boas directed attention to the significance of small or "occult" haemorrhages from the gastro-intestinal tract, and it was then recognized that the presence of minute traces of blood in the faeces is of great diagnostic significance and affords most important evidence of existing serious organic disease of the stomach, intestine, and other organs. In spite of this, the routine examination of the stools for "occult" blood has not been employed to the extent that it might be, possibly owing to the belief that diet may render the tests valueless unless performed under special precautions.

It has always been stated that the patient must be put on a meat- and chlorophyll-free diet for at least three days before performing the test. As Dr. Ogilvie states, "a notable exception to this is Maclean [*Digestion and Gastric Disease*, p. 129], who states categorically that such precautions are not at all necessary." In this I quite agree, after a fairly large experience of testing the stools of patients on different diets containing large amounts of meat—far more than anyone with dyspeptic trouble would be likely to consume—and patients on full hospital diets. These patients were not suffering from any disease likely to give rise to "occult" bleeding. The stools gave uniformly negative results with the pyramidon and benzidine tests, with the exception of three specimens. The three "positives" gave such indefinite colour reactions that little stress could be placed on them. The stools of diabetic patients who were having large amounts of green vegetables were examined, and with the exception of one specimen the stools were negative to the benzidine test. The one faintly "positive" reaction was probably due to contamination. The results of these investigations carried out at St. Thomas's Hospital would support the statement of Professor Maclean and Dr. Ogilvie.

I should like to say that, in my opinion, the most reliable

test for general purposes is the benzidine; it is easy to perform, has a very definite colour reaction, and is of sufficient delicacy. I do not agree with Koopman and Gregersen, who express the opinion that the pyramidon and benzidine tests as generally used are too delicate. I have obtained positive reactions with these tests in cases of carcinoma of stomach and intestine when the Schönbein-Almén turpentine guaiac test and the acidulated ethereal extract modification of Weber, and the aloïn test as suggested by Klunge, Schär, and Rossel were negative, and the ultimate findings at operation were in support of the positive reactions obtained by the pyramidon and benzidine tests. What I would emphasize is that there are cases of carcinoma in which the blood in the faeces is in such very minute amount that it will only be detected by such tests as the benzidine, and will fail to give a positive reaction with the less delicate guaiac and aloin tests. On the other hand, the more sensitive tests, such as the phenolphthalein and the tolidin test of Ruttan and Hardisty, are too delicate and should only be used in conjunction with such tests as the pyramidon or benzidine.—I am, etc.,

Pathology Department, Marischal College, Aberdeen, April 27th. R. OGILVIE GIRDWOOD, M.B., Ch.B.Aberd.

INFLUENZA AND ALBUMINURIA OF PREGNANCY.

SIR,—I am sorry that Dr. Ambrose Owen will not allow that compression of the kidney is a cause of albuminuria. If kinking of the left renal vein (from lordosis) will cause a left-sided albuminuria as in orthostatic albuminuria (Russell) and in some cases of pregnancy (Frank Cook), and if clamping the ureter for one hour (by which the blood flow through the kidney is diminished) is a cause of albuminuria (Ludwig, 1864), I fail to see the difficulty in admitting that a pressure on the kidney as a whole can cause albuminuria. I have referred already to the albuminuria of athletes; women during labour also often pass albumin. It is quite clear that in these cases the albuminuria is due to a series of compressions of the whole kidney. A persistent cough (as in my case of pre-eclampsia) causes also a similar series of compressions, and that it can determine an albuminuria as in pertussis (Bodman) is reasonable. If cough can cause a knuckle of intestine to be pressed into the femoral canal and produce intestinal obstruction, I see no difficulty in the conception that cough can obliterate renal capillaries, and under certain conditions even induce an obstruction of uriniferous tubules (the base of acute nephritis), certainly in pregnancy.

Dr. Owen, however, denies an effect to cough in these cases. He says: "Nephritis follows influenza oftenest when there is no cough." That is an opinion to be confirmed. Even if acceptable, we must remember there are other forces besides cough which may disturb the blood flow through the kidney and cause albuminuria, even in the non-pregnant. Toxins have been imputed as the cause; their exact mode of action I should like to know. I ruled out toxins in the cases before us, partly because of Dr. Gutch's statement that "the pregnant woman only is affected in this way." The occurrence of haematuria (in tonsillitis) and of albuminuria and nephritis in the non-pregnant, without cough, does not affect the issue; for it is by no means certain that these conditions are produced by toxins affecting the kidneys. Indeed, it is not certain that the so-called "acute nephritis" is in fact an acute inflammation of the kidney. The condition clinically usually appears as anything but an acute inflammation of the kidney. Acute nephritis is very different from acute pyelitis, to which Dr. Owen refers. Here, indeed, we have a picture of a veritable inflammation, affecting even the renal substance.

Finally, neither the "kidney of pregnancy" nor the kidney of eclampsia is due to a toxin. Dr. Owen thinks accidental haemorrhage may be due "to extraneous organisms of the influenza family," and that "suppression of urine after labour" may be tracked to the same cause. I would like to ask whether the anuria induced by emptying too rapidly the overdistended bladder of elderly men with enlarged prostate, or the similar effect at times similarly induced in boys with congenital and tight phimosis, is due to influenza. The suppression of urine after labour, associated as it is with a marked fall in intra-abdominal pressure, due to emptying the uterus, is comparable with these others; it is to be explained in the same way—from which it follows that the cortical necrosis of the kidneys, the pathological finding in these cases and which has been observed in a man with carcinoma of the prostate (Parkes Weber), is produced, not by any toxin, but simply in a mechanical way.

In reply to Dr. Bodman, may I say that in pregnancy the intra-abdominal fat largely disappears. At Caesarean section the great omentum is never or rarely laden with fat as often in the non-pregnant: on palpating the kidneys at the operation, perirenal fat is almost completely absent. It is the result of an atrophic process induced by the rise of the intra-abdominal pressure in pregnancy which affects the whole visceral mass, tending to prevent the visceral hypertrophy so necessary in pregnancy, and even at times causing here and there ischaemic states. In the non-pregnant the large bed of fat cannot prevent the kidney feeling the effects of the intra-abdominal pressure; that is shown by the frequency of albuminuria in athletes and others after exercise. That in pregnancy the blood is altered and that the glomerular membrane permits altered protein particles to pass is not the whole story; the excretion of albumin as of urine depends on a pressure effect. The point is that if the blood cannot readily traverse the capillaries about the convoluted tubules the pressure in the glomeruli is increased, so that even if the blood is not altered in the way mentioned, rupture of glomeruli may occur, and even without rupture albumin may be extruded.—I am, etc.,

Rugby, April 8th. R. H. PARAMORE, F.R.C.S.Eng.

PATHOLOGISTS.

SIR,—From the JOURNAL it seems that the Council is anxious to improve the status and professional prospects of the pathologist. Far more members of the profession should be acting as pathology specialists. Pathology as a science would benefit, more pathological work would be done, and thus medical knowledge would be increased.

During my twenty-seven years' medical work in Lancashire, nothing astonished me more than that the Miners' Federation should be content to accept decisions in compensation cases based upon *post-mortem* examinations made by general practitioners. For very many years I have contended that *post-mortem* examinations for legal purposes should only be made by pathology specialists, and that these should be appointed for every part of the country. They should be closely associated with the coroners; they should be the inspectors of all deaths, and the suppliers of confidential information to the Registrar-General. Thus could be removed the present scandals connected with death certification, and the vital statistics of the Registrar-General would become more accurate, and consequently of greater value. I believe that this reform would be welcomed by general practitioners, by pathologists, and by the public.—I am, etc.,

Southend-on-Sea, April 25th. FERDINAND REES, M.D.

RESISTANCE TO QUININE IN MALARIA.

SIR,—Lack of absorption has long been recognized by West African doctors as the main difficulty in the efficient exhibition of quinine.

As an instance, in 1900 I saw 90 grains of quinine sulphate in solution given within sixteen hours without any apparent effect. The next day 5 grains of the hydrochloride were administered intramuscularly with the happiest results.

The comparative rates of absorption of the various salts may be tested easily by the ordinary individual, if he will remain in a quiet room for a while after taking his dose. In a sensitive case two 3-grain tablets of the bihydrochloride begin to make their presence known in a little over twenty minutes; a 5-grain tablet of the hydrochloride, or bisulphate, takes about five minutes longer; while the

same amount of the sulphate starts "singing" only after half an hour. Curiously, it makes no difference to me whether the quinine is taken after meals or into a fasting stomach.—I am, etc.,

Steep, Petersfield, April 16th. F. JUPE.

INJECTIONS OF ACRIFLAVINE FOR TUBERCULOSIS.

[THE following letter has been received regarding a report by Dr. G. H. Johnson (BRITISH MEDICAL JOURNAL, March 27th, 1926, p. 567) of the successful treatment of three cases of advanced tuberculosis by injections of acriflavine. In two cases the first dose was 5 minims of 1 in 1,000 solution of acriflavine in normal saline. Three doses were given at intervals of forty-eight hours, and, there being no contra-indications, the dose was rapidly increased to 40 minims twice a week. In the third case, after smaller initial doses, the patient was given 25 minims of the solution every fourth day.]

SIR,—This note greatly interested me, as tuberculosis in India is even a larger problem than at home. It is equally rife, and one has in addition to combat ignorance, prejudice against rational forms of treatment, and general unhygienic ideas on an even greater scale than in England.

In view of this encouraging report I tried intravenous injections of acriflavine in varying strengths on six cases of tuberculosis, including one of tuberculosis of the spine. I found that up to 20 cg. could be given at one time without ill effect to even such a small person as one of 5 st. weight. I was unaware at that time of the existence of the very useful table of intravenous doses in Martindale's *Extra Pharmacopoeia*, where I note that the maximum dose is entered as 20 cg., to be given in 200 c.cm. diluent. We, however, used considerably stronger solutions for the sake of convenience in administration—up to even 1 in 5 strength, of which the maximum dose was 1 c.cm.

Without going into detail, I can say that in no case of tuberculosis had either small or large doses the slightest recognizable effect: there was no immediate reaction, and in only one case could a benefit, which occurred during the stay in hospital, be suspected as being in any measure due to the injections.

In one case of septicaemia complicating ischio-rectal abscess, there seemed to be definite improvement following on the use of the injections. The maximum dose given to this case was only 1 cg.

I have tried also with intravenous injections of solutions of mercurochrome-220 sol, but so far only up to doses of 0.5 cg.; these have had no recognizable effect in the treatment of tuberculous patients.—I am, etc.,

Itarsi, India, April 8th. ROBERT J. GITTINS.

TRAUMA AS A CAUSE OF AURICULAR FIBRILLATION.

SIR,—In the BRITISH MEDICAL JOURNAL of April 30th (p. 817) Dr. Hay does produce convincing evidence from competent observers that auricular fibrillation can be set up by effort in a heart which is apparently quite normal otherwise, and I am glad that he has published these personal experiences of medical men. I have heard of a referee at lacrosse who has the condition after Saturday's effort and not at other times. But for compensation cases it does not matter whether auricular fibrillation which disables is primary or secondary to effort arising out of and in the course of employment, so wide is the legal definition of accident, as I show in my book on the subject, which Dr. Hay referred to in his original paper.—I am, etc.,

Manchester, April 30th. E. M. BROCKBANK.

CARCINOMA OF THE HEART.

SIR,—In reply to Mr. Fitzwilliams's inquiry (April 16th, p. 744) with reference to the case of carcinoma of the heart reported by me (BRITISH MEDICAL JOURNAL, February 19th, p. 325), it is, of course, obvious that primary was the wrong word to use, but was only employed because no primary growth was found. I can give assurance that the tongue was examined as carefully as could be done macroscopically, and there was no sign of malignant or other growth. The accessory sinuses were not examined. The age of the patient was 77.—I am, etc.,

London, S.W., April 27th. THOMAS LINDSAY.

Obituary.

WILLIAM COLLINGRIDGE, M.D.,

Formerly Medical Officer of the Port of London.

DR. WILLIAM COLLINGRIDGE, whose death in retirement occurred on April 29th, was best known as medical officer of the Port of London at a time when that important department of medical administration was still in an early stage of development.

He was born in 1854, and was the eldest son of Mr. W. H. Collingridge, founder and for a long time editor of the *City Press*. He went up to Christ's College, Cambridge, and graduated B.A. with honours in natural science in 1878, and took the degree of M.B. in the same year. In 1879 he obtained the D.P.H. and proceeded to the M.D. in 1882. In 1883 he took the LL.M. and was called to the bar by Gray's Inn. He was a student at St. Bartholomew's Hospital, and in 1875 he volunteered for service with the forces in the Turco-Serbian war; he organized field hospitals, and at the close of the campaign received a decoration from the King of Serbia.

After two years in private practice he was appointed, in 1880, medical officer of the Port of London, a post he continued to occupy until 1901. During his period of office the work of a port sanitary authority greatly increased and Collingridge fully rose to the occasion. New duties were imposed on these authorities by Parliament, and others were voluntarily undertaken by the Corporation of the City. Collingridge made his department a model for other similar authorities, and, in particular, the precautions successfully taken for the exclusion of exotic diseases set an example which was widely followed. The prevalence of cholera on the Continent at one time caused great anxiety, but the defence of the Port of London proved sufficient and no case of the disease slipped through. In 1901 he succeeded Dr. Sedgwick Saunders as medical officer of health for the City of London. In this capacity he had to deal with many important questions, some of them novel; one was the possibility of the conveyance of typhoid by oysters, a subject to which Sir William Broadbent had called attention in our columns. The regulations which had to be imposed were distasteful to many firms engaged in the trade, but Collingridge, backed up by the medical department of the Local Government Board, stuck to his guns, and eventually the public was convinced of the need of special precautions, and the trade had perforce to acquiesce. Other matters in which he was particularly interested were the safeguarding of the milk supply and the sanitation of the kitchens of restaurants, which, in the crowded area of the City of London, were not above reproach. He was one of the first to recommend the employment of women sanitary inspectors, and in all respects he was a most vigilant officer. He retired in 1913.

While still at Cambridge Collingridge joined the University Rifle Corps, and was afterwards, for ten years, a member of the Honourable Artillery Company (F Battery). For seven years he was in the Volunteer Medical Staff Corps, and for eight years was in command of the Militia Medical Staff Corps, attaining the rank of lieutenant-colonel, which rank he also held in the Territorial Force. He was honorary colonel of the Woolwich Division of the R.A.M.C. Volunteers. Altogether he served for thirty-three years in the Volunteers and Territorials. During the great war he resumed service, and was medical officer in charge of the Auxiliary Medical Hospital (122 Kent) from 1914 to 1919.

DR. GUY WITTON MILLER died at his residence at Streatham on April 18th, after a short illness. He was born in 1877, and received his medical education at

St. Bartholomew's Hospital Medical School; he obtained the diplomas of M.R.C.S. and L.R.C.P. in 1902. After serving as house-surgeon and house-physician to the Birmingham Children's Hospital he practised at Pinhoe, Devonshire, and North Thoresby, Lincolnshire; in 1921 he succeeded Dr. Louis Robinson in practice in Streatham, where he won many friends. On the outbreak of the late war he joined the Territorial Force and served with the London Field Ambulance in France from 1915 to 1917, being present during the battles on the Somme. Dr. Miller, who was a member of the Wandsworth Division of the British Medical Association, is survived by his widow and one daughter.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

Protection of Dogs Bill.

THE order for the second reading of the Protection of Dogs Bill, the full title of which is "A Bill to Prohibit the Vivisection of Dogs," was called in the House of Commons late in the sitting of Friday, April 29th. The speeches of the mover and seconder occupied practically all the available time, only one minute being left to Dr. Fremantle for a reply. Consequently the bill was talked out without a division.

In moving the second reading, Sir Robert Gower said the bill provided that it should be unlawful to make any experiment upon a dog of a nature calculated to give pain or to cause disease. Such experiments for any purpose whatsoever, whether with or without anaesthetics, were to be prohibited, and no place should be licensed for the purpose of performing them. He regretted that it was impossible at that hour adequately to state the case for the bill and at the same time to give those who opposed it an opportunity to state their case. The bill had thrice previously passed second reading and had once passed through Committee. But for an accident it would have been on the statute book. It was not brought forward to obstruct or hamper legitimate surgical or medical research, and the general question of the vivisection of animals did not arise on it. In presenting the case he would, he said, rely on statements made by eminent medical men, and proceeded to cite arguments advanced by Dr. Fielding-Ould in the *Times* in reply to Sir Charles Ballance and Mr. Walter Spencer. He also quoted a speech made in April, 1922, by Sir Lambert Ormsby, Vice-President of the Royal College of Surgeons in Ireland, who had declared that experiments on dogs could now be discontinued. He could quote other eminent medical men on the question. With one exception no attempt had been made by opponents of the bill, or by members of the medical profession, to prove it necessary in the interests of humanity that vivisection experiments should continue on dogs. The exception was that Dr. Starling, the Foulerton Research Professor of the Royal Society, said that dogs could not be replaced in the experiments by the ordinary farm animals because these differed widely from man in the structure, functions, and habits of their digestive organs. Sir Robert Gower cited against this the opinion regarding the suitability of the pig of Sir William Osler, who, in giving evdence before the last Royal Commission on Vivisection, had said that everyone felt it would be much better to use other animals than the dog. Sir Robert Gower thought that no medical man would dispute that in many cases great suffering was involved to the animal which was the subject of such experiments. Dr. George Wilson, medical officer of Warwick, had at a meeting of the British Association at Portsmouth, spoken of "long-drawn-out agony." Dr. Vernon Davies asked if that was said in 1898. Sir Robert agreed, but thought Dr. Davies would agree that these conditions might to a great extent apply now. He had a number of extracts from the BRITISH MEDICAL JOURNAL, giving particulars of operations and experiments performed within the last year or so. In his opinion these extracts showed that the animals did suffer agony and misery. The Research Defence Association had suggested that in the petition prepared by the National Canine Defence League untrue statements appeared. As chairman of the League he said that these statements—a reference to revolting experiments before classes of students—had been made by error in another petition some years ago. That petition had been withdrawn. Colonel Moore, in seconding, said he was not an antivivisectionist. He believed vivisection necessary for the protection and extension of human life, but he was not convinced that dogs were necessary for these experiments. Professor Lawson Tait had said "the fact is that diseases of animals are so different from those of men that the conclusions of vivisectionists are absolutely useless."

Dr. Fremantle: In what year did he say that?

Colonel Moore: I cannot say off-hand.

Dr. Fremantle: Twenty-five years ago.

Colonel Moore proceeded to argue that the incidence of the diseases for the cure of which vivisection experiments were carried on had increased. In twenty years the death rate from cancer had increased by 46 per cent., from diabetes by 55 per cent., and from thyroid diseases by 85 per cent. Of diseases the cure of which largely depended on open-air and hygienic conditions, the death rate from enteric had fallen in twenty years by 89 per cent., from measles by 60 per cent., and from scarlet fever by 77 per cent. These figures, he submitted, provided an adequate case for the removal of dogs from the activities of the vivisectionists.

Dr. Fremantle said he had half a minute to move the rejection of the bill. He and his friends could fully meet the case which had been made and would be glad to do so. They would be pleased to meet the supporters of the bill in a discussion at the House or elsewhere.

At 4 o'clock Sir Richard Luce rose to continue the discussion. Thereupon the House adjourned and the bill was talked out.

Inspection of Experiments on Animals.

In an answer on April 28th Sir W. Joynson-Hicks said two inspectors were employed by the Home Office under the Cruelty to Animals Act. An inspector was not always present at demonstrations upon animals under anaesthetics before classes of students. An inspector last directed an animal to be killed on March 25th, 1926.

On April 28th Dr. Fremantle presented a petition, signed by all the leading members of the medical profession concerned in medical education, including 1,497 names of medical members of university staffs, medical schools, and teaching hospitals in Great Britain and Northern Ireland, of whom not one had refused his signature. The text of the petition is published in the SUPPLEMENT (p. 196).

Married Women's Employment Bill.

The House of Commons, on April 29th, rejected the Married Women (Employment) Bill by 84 to 63. Moving the second reading, Sir Robert Newman explained that the object of the bill was to prohibit the discharge by public authorities of women employees on marriage. He said some of the leading women doctors were married, and if a woman could hold a high position in such a scientific profession, surely she was qualified to carry out duties in other directions. Mr. Pethick-Lawrence said in the case of doctors a great deal of time and money was used in preparing the woman for the post she was to occupy. If because a woman married the whole value to the community of those years of training was thrown away, the waste was extravagant. Examples from the medical profession showed that many married women and mothers were capable of carrying out their work efficiently. Mr. Remer, moving the rejection of the bill, said that possibility of childbirth after marriage must involve long absence from work and would probably make it impossible for a woman to continue her employment. Sir Henry Slesser said there might be employments where it was right and proper that a woman should receive leave of absence while children were born and then return to her employment. Sir G. Dalrymple White said those who supported the bill were supporting the principle of birth control. Mr. Snell said that the skill of a woman surgeon was cumulative; if she wished to live a normal life as well as be a surgeon was all her training to be scrapped? Mr. Thurtle said that the question of the inefficiency of the married woman during the ante-natal and post-natal periods was not so important as might be imagined. The average size of the families of such people as teachers and civil servants was not more than two children, whereas the normal business life was twenty to thirty years. There was medical evidence to show that if normal sexual life was denied to women neurotic conditions tended to develop, and there would be just as great a loss of efficiency through enforced celibacy as through their having to devote attention to the home. Mr. Ronald McNeill (Financial Secretary to the Treasury) opposed the bill. He said there might be considerable intervals in the year when the efficiency of the married woman worker for her job disappeared. The Civil Service had a medical examination for both men and women entering it, because in the interests of the service as a whole they must not accept a high risk of breach of continuity in the work. It was common medical knowledge that in some cases pregnancy inflicted great loss of health and strength and spirits upon a woman, sometimes for many months, while others who were more happily constituted would go on until within a few days of confinement without apparently suffering any loss of physical vigour. These facts added enormously to the sickness risk which the Government would have to take, with a consequent loss of efficiency over the whole service. It would be competent to the Government or to the King in Council to make a regulation admitting married women to employment in the Civil Service, but the Sex Disqualification (Removal) Act, 1919, imposed no obligation on the Government as regards the Civil Service or upon any local authority, to make the appointments which that Act rendered valid. Dr. Little said the opposition to the bill was founded upon fallacious medical propositions. The objection made to the employment of women rested largely upon a physiological incident of life among married women—a physiological incident which varied very much in its suspension of activity. Anyone comparing the numbers of absentees in any service, both male and female, would find quite as many males suffered from sexual disability, and absences from this cause were an important set-off to the absences of women caused by disabilities resulting from sex. The universities of this country had this question before them and had solved it. They made no distinction whatever between the sexes. There was no support for the so-called medical argument. It had not been urged by any medical authority, and fell to the ground.

As stated above, the bill was rejected by the House.

Ex-Service Men and National Insurance.—On May 2nd Mr. Chamberlain informed Sir B. Falle that the time within which a man discharged from service might apply for readmission to the Navy, Army, and Air Force Insurance Fund was governed by regulations under the National Health Insurance Act, 1924. Legislation would not be required to provide that the time should not include a period when a would-be applicant was suffering

from mental ill health. Mr. Chamberlain was not at present satisfied that any hardship arose under the regulation, but would carefully consider whether any modification was desirable.

Miner's Nystagmus.—In seconding a motion by Mr. George Hirst on April 27th, on the loss of life and number of accidents in mines, Mr. Grundy asked what the Government was doing about nystagmus, regarding which the Medical Research Council had reported in 1922-23 that its chief cause was insufficient illumination, and that severe cases could be prevented by improving the standard of illumination. Nystagmus had increased: in 1921 there were 6,717 cases, but in 1925 11,334. Mr. R. Hudson said the annual reports of the inspectors of mines harped on the avoidability of many of the accidents. The results of investigations into the diminished output and increased liability to accidents to munition workers, open-hearth smelters, and rolling mill men had caused a similar investigation to be made into the conditions in hot and deep mines. These investigations had shown the importance of ventilation, and the subject was being intensively studied by a committee of the Institution of Mining Engineers. When the engineering problems involved had been solved a diminution in the accident rate in mines might be anticipated. Mr. Paling said that work done by the Industrial Fatigue Board and the Medical Research Council was valuable, but hardly a suggestion made by them had been put into operation by legislation, administration, or regulation. Colonel Lane-Fox (Secretary for Mines), in his reply, said the suggested reorganization of his department would not involve less efficiency in safeguarding the health and safety of miners. In ensuring safety in mines Great Britain was still ahead of all the countries in the world except, possibly, France. The accident rate and death rate were slowly decreasing. He summarized the inquiries now in hand under the Safety in Mines Research Board. The use of electricity in mines should not be discouraged, but made safer.

Ill-written Prescriptions.—Mr. Dunnico asked Mr. Chamberlain, on April 28th, whether his attention had been called to the complaint of the Nottingham City Insurance Committee that, owing to the careless way in which the prescriptions of panel patients were made out, chemists had difficulty in deciphering them. Mr. Chamberlain replied that the only complaint of this kind received from the Nottingham Insurance Committee related to the assistant of an insurance practitioner, whose attention was at once called to the matter. The Minister was not aware that there had since been any difficulty, and there did not appear to be any necessity to take further action.

I.M.S. Course for Promotion.—In an answer to Mr. Pethick-Lawrence, on April 27th, Earl Winterton announced that the Secretary for India had decided that all officers of the Indian Medical Service, including those of Asiatic domicile, should be required, before promotion to the rank of major, to complete the senior officers' course at the Royal Army Medical College, Millbank. Attendance at this course would count as duty, and would carry with it free passages to and from the United Kingdom. Officers of the Indian Medical Service of Asiatic domicile would, immediately after completing this course, be regarded as eligible for a period of study leave, during which they would retain a lien on their free return passage to India. Officers of Asiatic domicile who were on service, and who by reason of their age were disqualified from attending the senior officers' course, would be eligible once during their service for a free passage to England and back when on study leave. Full effect could not be given to the scheme in the present financial year.

Notes in Brief.

Mr. Chamberlain states that, so far as he can judge, the regulations with regard to preservatives in foodstuffs are working satisfactorily.

The Home Secretary stated, on April 28th, in reply to Colonel Day, that there was no question of the Home Office adopting the Report of the Council of the British Medical Association defining tests for drunkenness. The courts must decide on what evidence they would convict for drunkenness.

The Services.

NAVAL MEDICAL COMPASSIONATE FUND.

AT the quarterly meeting of the directors of the Naval Medical Compassionate Fund, held on April 21st, when Surgeon Vice-Admiral Sir Joseph Chambers, K.C.B., C.M.G., Medical Director-General of the Navy, was in the chair, the sum of £210 was distributed among the several applicants.

TERRITORIAL DECORATION.

THE Territorial Decoration has been conferred upon the following officers of the R.A.M.C.(T.A.): Colonel Leonard Austin Harwood and Major William Ferguson Mackenzie.

VOLUNTARY AID DETACHMENTS.

THE War Office states that 800 voluntary aid detachments—77 men's and 723 women's—have now received official recognition, and that the total membership is 18,885. Of these members 2,932 have undertaken the obligation to serve with the medical services of the Navy, Army, or Air Force, either at home or abroad, in the event of war or other national emergency. Mobile members are accepted for a course of eight days' training in a service hospital once every three years. Every officially recognized detachment is inspected annually by the Deputy Director of the Army Medical Service or an R.A.M.C. officer representing him, who sends a report to the War Office.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

APPLICATIONS for the E. G. Fearnsides scholarship for research on the organic diseases of the nervous system, which is open to graduates in Medicine or to graduates in Arts who have passed Part II of the Natural Sciences Tripos, must be sent to the University Registry before June 20th.

At a congregation held on April 22nd the following medical degrees were conferred:

M.B., B.CHIR.—E. M. Shackel, D. McI. Johnson, C. J. L. Sharp.
M.B.—R. W. B. Ellis, J. L. Edwards, J. B. Ellison, J. W. E. Cory.

UNIVERSITY OF LONDON.

THE following candidates have been approved at the examination indicated:

DIPLOMA IN PSYCHOLOGICAL MEDICINE.—(*With special knowledge of Psychiatry*): I. Atkin, G. C. Berg, A. Darlington, Florence M. Gamble, P. L. Goitein, J. F. Williams. (*With special knowledge of Mental Deficiency*): G. Brown, Mary V. Littlejohn, W. Wyatt.

VICTORIA UNIVERSITY OF MANCHESTER.

THE following appointments have been made:—*Lecturer in Obstetrics and Gynaecology*: Dr. J. Webster Bride. *Assistant Lecturer in Obstetrics and Gynaecology*: Dr. K. V. Bailey. *Demonstrator in Obstetrics and Gynaecology*: Dr. J. W. A. Hunter. *Lecturers in Operative Surgery*: Mr. E. E. Hughes and Mr. A. H. Southam.

The conferment of degrees in medicine and dentistry will take place on Saturday morning, July 9th.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary quarterly comitia of the Royal College of Physicians of London was held on April 28th, when the President, Sir John Rose Bradford, was in the chair.

Fellowship.

The following were elected to the Fellowship on the nomination of the Council:

William Smith Paget-Tomlinson, M.D.Lond. (Kirkby Lonsdale), George Hall, C.M.G., M.D.Lond. (Newcastle-on-Tyne), Donald Elms Core, M.D.Manch. (Manchester), Henry Pratt Newsholme, M.D.Oxf. (Croydon), Arnold Walmsley Stott (London), Georg Herman Monrad-Krohn, M.D.Christiania (Christiania), Thomas Henry Gostwyck Shore, M.D.Camb. (London), Vivian Bartley Green-Armytage, M.D.Bristol (Calcutta), Reginald St. George Smallridge Pond, C.B., M.B.Edin. (Plymouth), Maurice Davidson, M.D.Oxf. (London), Thomas Izod Bennett, M.D.Lond. (London), Edward Mapother, M.D.Lond. (London), Charles Frederick Terence East, M.B.Oxf. (London), Hugh Maclean, M.D.Aberd. (London).

Nominated by Council under By-law xxxviii (*b*):

Andrew Balfour, C.B., C.M.G., M.D.Edin. (London), Sir Squire Sprigge, M.D.Camb. (London).

Temporary by-laws were adopted admitting *in absentia* to the Fellowship Georg Herman Monrad-Krohn (Norway) and Vivian Bartley Green-Armytage (India).

Membership.

The following candidates, having satisfied the Censors' Board, were elected as Members:

Eric Harold John Berry, M.B.Lond., L.R.C.P., Captain Sohan Lal Bhatia, I.M.S., *M.C.*, M.D.Camb., L.R.C.P., George Frederick Buchan, M.D.Glasg., Arthur Burrows, M.D.Lond., L.R.C.P., Robert Greenhill Cochrane, M.B.Glasg., L.R.C.P., Elizabeth Mary Cowie, M.D.Lond., L.R.C.P., Edward Charles Dodds, M.D.Lond., L.R.C.P., Alfred Claude Mitchell Elman, M.B.Lond., L.R.C.P., John Bell Ferguson, M.D.Edin., Frederick James Theodore Fcensander, L.R.C.P., Ian Wolfe Gallant, M.B.Lond., L.R.C.P., Dorothy Gibson, M.D.Lond., L.R.C.P., Arthur Cecil Hampson, *M.C.*, L.R.C.P., Alan Trevor Jones, M.B.Lond., L.R.C.P., Georges Klionsky, M.B.Lond., L.R.C.P., Allan Dunstan Lamphee, M.B.Adelaide, Joseph Tegart Lewis, M.D.Belfast, Frederick Ernest Loewy, M.D.Vienna, L.R.C.P., John Allison Macfadyen, M.B.Oxf., Eugene McLaughlin, M.B. Adelaide, Peter Henry Martin, M.B.Oxf., Peter Milligan, M.B.Glasg., Henry Seaward Morley, M.B.Lond., L.R.C.P., Cyril Thomas Piper, M.B.Adelaide, Alice Campbell Rose, M.B.New Zealand, Leonard Victor Snowman, M.B.Camb., L.R.C.P., Saravanamuttu Somasundram, L.R.C.P., Captain Thomas Harold Thomas, I.M.S., L.R.C.P., Neil Thorburn Melrose Wigg, M.B.Adelaide.

Licences.

Licences to practise were granted to the following 164 candidates:

V. H. Addison, B. W. Alexander, *Sophia A. P. Allen, R. G. Apthorpe, H. E. C. Aslett, Hanna Aziz, J. D. Bailey, W. B. Ballenden, G. H. Barendt, J. F. L. Barnes, C. J. Bashall, A. Batty, H. Bell, T. G. Benjamin, C. P. J. Bester, H. O. Blauvelt, *Dorothy Bolton, E. J. Boschi, W. J. Branday, L. G. Briggs, C. F. Brockington, R. Bruce, E. Burton, W. A. Busby, E. N. Butler, G. D. G. Cameron, *Emily E. Cass, K. B. Chakravarti, A. D. Charters, R. L. Cheverton, E. T. Clifton, *Mary C. E. Constantine, C. B. Crofts, W. V. Cruden, A. R. Culley, R. Cunningham, S. F. L. Dahne, B. G. Dain, B. B. Dalal, S. D. Dalal, K. E. D. Dauncey, C. S. Davies, T. G. Davies, L. F. Day, R. S. De Bruyn, S. J. De Navasques, C. H. Dhala, *Elsie M. Douglas, *Grace C. Evans, R. V. Farr, *Isabella Forshall, K. M. Foster, G. H. Froggatt, J. Furman, A. A. H. A. Fyzee, H. S. Gaussen, F. W. Gayford, H. C. Geldard, H. Girling, V. A. Goldman, J. M. Graham, *Marion L. Grimmer, L. C. Gunasekara, A. L. Gunn, *Vivienne M. Gunson, A. K. Gupta, V. C. J. Harris, W. R. B. Harrison, J. A. Hartley, A. H. B. Heesom, *Kathleen Heyes, C. A. N. Hicks, F. R. How, W. Hyman, R. E. Isaac, *Ausa H. Jackson, M. I. Jackson, *Amy L. Jagger, L. R. Janes, *Margaret E. Jones, W. P. Jones, W. B. R. Jones, J. Joseph, R. Kakn, R. W. Kenney, S. M. Kharegat, N. A. King, R. A. King, H. J. Krichefski, A. H. Lankester, P. G. Lovick,

O. I. Lewis, S. C. Lewsen, *Margaret I. Little, L. G. Llewellyn, P. V. MacGarry, *Annie M. McGrath, H. Mallinson, *Nancy S. Marshall, T. W. Masters, S. P. Meadows, *Gwendolen E. M. Meyer, F. J. Millward, J. K. Moore, *Barbara E. M. Morris, F. B. Mulvany, J. H. Mulvany, *Sybille L. Myers, K. G. Nerurkar, C. G. MacM. Nicol, M. G. Nimatallah, *Jessie G. A. Norman, T. St. M. Norris, R. E. Norrish, M. D. Nosworthy, *Audrey S. Nunn, A. B. Nutt, D. E. Oakley, R. Oddie, C. E. Ogden, R. L. Osmaston, B. N. Pajnigar, *Maud Palmer, *Marjorie E. Parfitt, *Florence M. Parsons, G. E. B. Payne, E. A. Pye, A. Rabinowitz, M. Ragheb, *Marjorie M. Readman, D. V. Rice, R. I. Richards, W. H. Roberts, S. Rodker, S. F. Russell, J. C. Saldanha, S. W. Savage, W. H. Scott-Easton, W. H. Scriven, S. Shalaby, N. H. Skelton-Browne, L. A. P. Slinger, F. C. Smith, H. M. S. Stanley, J. F. Stent, *Florence V. Stephen, T. C. Stevenson, G. R. S. Stewart, B. M. Sundaravadanan, A. G. S. Tabb, W. H. Tandy, W. E. Underwood, C. W. Walker, J. Wasserstein, C. F. Watts, *Maeve Whelan, G. D. D. Wijesekera, D. A. J. Williams, M. G. Williams, H. M. Willoughby, C. G. Windsor, *Elsie B. Wright, M. Yaukelovitch, *Margaret I. Yeatman.

* Under the Medical Act, 1876.

Appointments.

Dr. Fawcett was re-elected a representative of the College on the Senate of the University of London.

The death of the late junior standing counsel to the College (Mr. Dighton Pollock) was announced. The President nominated as his successor Mr. C. Stafford Crossman of Lincoln's Inn, who was elected.

The President announced that he had nominated, pending confirmation by the College, Dr. C. O. Hawthorne, on behalf of the College, to serve on a Departmental Committee appointed by the Ministry of Health to consider a draft bill prepared by the Joint Committee of Qualified Opticians to provide for the registration of optical practitioners and to regulate the practice of sight testing. The nomination was confirmed.

The following were appointed delegates to represent the College at the functions indicated: *Centenary of University College, London* (June 23rd, 1927): Dr. H. Morley Fletcher (senior censor). *Centenary of Granting of Charter of King's College, Toronto* (October 6th, 1927): Dr. R. D. Rudolf. *Third Imperial Social Hygiene Congress, London* (October 3rd to 7th, 1927): Dr. S. W. Wheaton. *Centenary of Death of Pinel and Birth of Vulpian, Paris* (May 30th and 31st, 1927): Dr. C. H. Bond.

Harvey Tercentenary Celebration.

A report was received from the committee appointed to make suitable arrangements for the celebration of the Harvey Tercentenary in 1928. It was decided that the celebration should have both a social and a scientific side. The committee was empowered to proceed with these arrangements.

The Library.

The books and other donations presented to the Library during the last quarter were received and the thanks of the College presented to the donors.

Special mention was made of the gift of six or seven valuable books from Dr. Herbert Spencer.

Communications, dated March 11th and April 7th, 1927, were received from the Royal College of Surgeons.

After some further formal College business the President dissolved the comitia.

LONDON INTERCOLLEGIATE SCHOLARSHIPS BOARD.

Medical Scholarships.

THE London Intercollegiate Scholarships Board announces that the examination for six medical entrance scholarships of an aggregate total value of £513 will commence on June 28th. They are tenable in the Faculty of Medical Sciences of University College and in the medical schools of University College Hospital, the London Hospital, and the London (Royal Free Hospital) School of Medicine for Women. Full particulars and entry forms may be obtained from S. C. Ranner, M.A., the Medical School, King's College Hospital, Denmark Hill, S.E.5.

Medical News.

AT the meeting of the Röntgen Society on Tuesday, May 17th, a paper will be read by Dr. R. G. Canti on the effects of beta and gamma radiation on normal and malignant tissue cells growing *in vitro*; it will be illustrated by a cinematograph film. The meeting will be held at the Institute of Radiology, 32, Welbeck Street, at 8.15 p.m. The tenth Silvanus Thompson Memorial Lecture will be delivered by Professor Sir J. J. Thomson, O.M., F.R.S., on the evening of Tuesday, June 14th, in the house of the Royal Society of Medicine, 1, Wimpole Street, W. The subject of the lecture will be the structure of the atom and radiation.

THE Schorstein Memorial Lecture will be delivered by Professor Knud Faber in the anatomical theatre of the London Hospital Medical College on Thursday, May 19th, at 4.15 p.m. The subject of the lecture will be "Gastritis, its relation to achylia and ulcer." Members of the medical profession are invited to attend.

A MEETING of the Biochemical Society will be held this day (May 7th) in the Physiology Department of the University of Manchester at 3 p.m. A number of papers will be read and demonstrations given.

THE usual spring conversazione of the Royal Society will be held on Wednesday next, May 11th, at 8.30 p.m.

THE Fellowship of Medicine announces that demonstrations will be given on May 11th, at midday, by Mr. R. A. Greeves, at the Royal London Ophthalmic Hospital, and at 2 p.m., by Mr. Sidney Boyd, at the Hampstead General Hospital. On May 12th, at 1.30 p.m., Sir Thomas Horder will give a demonstration at St. Bartholomew's Hospital. These demonstrations are free to general practitioners. Throughout the month there will be courses in urology at the All Saints' Hospital, in psychological medicine at the Maudsley Hospital, and in venereal diseases at the London Lock Hospital; on successive Wednesdays a lecture demonstration on ante-natal diagnosis and treatment will be given at the Royal Free Hospital by Professor McIlroy. The Central London Throat, Nose, and Ear Hospital will hold an intensive clinical and operative course from May 9th to 28th. A course at the National Hospital, Queen Square, from May 9th to July 15th, will consist of clinical lectures and demonstrations, teaching in the out-patient department, and instruction in anatomy, physiology, and in methods of examination. From May 16th to 28th there will be a course in the diseases of infants at the Infants Hospital, and in medicine, surgery, and the specialties at the Hampstead General Hospital, the latter from 4.30 to 6 p.m. The Fellowship of Medicine can arrange for practical courses in obstetrics and anaesthetics, and also for clinical assistantships in gynaecology. Copies of all syllabuses and of the *Post-Graduate Medical Journal* may be obtained from the Secretary of the Fellowship, 1, Wimpole Street, W.1.

AT the meeting of the Zoological Society of London on Tuesday, April 26th, the vice-president, Sir A. Smith Woodward, F.R.S., who was in the chair, recalled the fact that the first recorded scientific meeting of the society was held on April 25th, 1827. It was reported in the *Times* of April 27th, 1827. Dr. Joshua Brookes, the eminent anatomist (1761–1833) had been invited by "the noble directors of the society" to lecture on his dissection of the body of an ostrich which had lived for two years at Windsor, and at death had been given to the society by the King. Lord Auckland, Lord Stanley, Dr. Birkbeck, and many others were present. In his general remarks Dr. Brookes said "the period had arrived when the science of natural history bade fair to reach a height in this country which would enable us to rival the establishments founded for its promotion abroad."

THE thirteenth annual conference of the National Association for the Prevention of Tuberculosis will be held in the Great Hall of the British Medical Association House, Tavistock Square, on June 30th and July 1st and 2nd. On the first day Mr. Neville Chamberlain will take the chair at 10.30 a.m., and a discussion will be opened on the relative values of present lines of attack on tuberculosis by Sir John Robertson, C.M.G., M.O.H. Birmingham. The discussion will turn on housing conditions—home and industrial—and among the speakers will be Professor H. R. Kenwood (London) and Professor Edgar L. Collis (University of Wales). Visits have been arranged to Burrow Hill Colony, Frimley; Preston Hall Industrial Settlement, near Maidstone; and to examples of housing schemes. The conference is open to all persons interested in tuberculosis, and the subscription, which will include a copy of the report of the proceedings, is £1 1s. The offices of the National Association are in the House of the British Medical Association, Tavistock Square, London, W.C.

THE KING has approved the reappointment of Sir David James Galloway, M.D., as an unofficial member of the Executive Council of the Straits Settlements.

THE Marquess of Dufferin and Ava has consented to accept the chairmanship of the board of management of the Royal Victoria Hospital, Belfast, in succession to Professor Lindsay, M.D., who has held the post for the last eight years and has gained the gratitude of all connected with the hospital. Mr. A. B. Mitchell, F.R.C.S., chairman of the medical staff, has been elected vice-chairman. During Professor Lindsay's rule the hospital made great strides and advances in all directions, and there is every reason to expect that the institution will continue to develop and to keep pace with the advance of scientific medicine and the ever-increasing requirements of a rapidly growing city.

THE annual report of the National Baby Week Council for 1926 records a great increase of activity in propaganda work. The demand for the supply of cinematograph films was nearly three times that of the previous year, and accounts are given of various competitions arranged by the Council. The pamphlet dealing with the organization of a baby week has been revised, and special attention is invited this year to the relation to maternity and child welfare of the home and of atmospheric pollution. The hope is expressed that the development of dental clinics and dental care for mothers and for children under the age of 5 will also be advocated. The offices of the Council are at 117, Piccadilly, London, W.1.

THE Rockefeller Medical Fellowships for the academic year 1927–28 will shortly be awarded by the Medical Research Council, and applications should be lodged with the Council not later than June 1st, 1927. These Fellowships are provided from a fund with which the Medical Research Council has been entrusted by the Rockefeller Foundation. They are awarded by the Council, in accordance with the desire of the Foundation, to graduates who have had some training in research work in the primary sciences of medicine or in clinical medicine or surgery, and are likely to profit by a period of work at a university or other chosen centre in the United States before taking up positions for higher teaching or research in the British Isles. A Fellowship will have the value of not less than £350 a year for a single Fellow, with extra allowance for a married Fellow, payable monthly in advance. Travelling expenses and some other allowances will be made in addition. Full particulars and forms of application are obtainable from the Secretary, Medical Research Council, 15, York Buildings, Adelphi, London, W.C.2.

THE British Red Cross Society is taking steps to form a branch of the society in Hong-Kong for the benefit of the British troops in the colony. A supply of comforts has already been sent, and a substantial sum has been placed to the credit of the Governor of Hong-Kong for the purchase of such additional hospital comforts as may be required.

LETTERS have recently been received from the Rev. J. D. MacRae, D.D., acting president of the Shantung Christian University, giving details of the arrangements which have been made for carrying on the work of the university and the maintenance of the University Hospital during the time that the foreign staff has been compelled by consular order to withdraw from Tsinan. A Chinese Executive Committee has been formed, consisting of Dr. Li-Tien-lu (acting vice-president of the university), Dr. P. C. Kiang (associate dean of the School of Medicine), and Mr. S. C. Lo (acting dean of the School of Theology), who have taken over responsibility for the work of the institution, supported by the other Chinese professors and members of staff. A special committee has been appointed for the control of the hospital, the medical service of which will be conducted by a group of Chinese doctors, graduates of the University School of Medicine. The head office of the university has been removed temporarily to Tsingtao (the seaport town situated 200 miles from Tsinan), and to it all deeds and other important documents have been transferred.

THE forthcoming International Congress on Goitre at Berne will begin on August 29th. The secretary, from whom all particulars can be obtained, is Dr. Carrière, Directeur du service fédéral d'Hygiène publique, Berne.

THE National Health Society, which during the fifty years of its existence has done so much excellent work for the promotion of the education and training of health workers, is making an appeal to tide it over the financial difficulties in which it now finds itself. During recent years the society has been engaged more especially in the training of health visitors, and its difficulties are largely due to the fact that the more exacting requirements as to training recently imposed are reducing the number of students. It is believed that within the next few years candidates in training will increase in number, and that the society will then be able to balance expenditure by income. The late Miss Fay Lankester was its secretary for many years; she has been succeeded by Miss C. Dickens, and the address of the society is now 90, Buckingham Palace Road, London, S.W.1.

THE Board of Education has published a revised edition of the list of certified special schools, recognized institutions for the training of blind and other defective students, and nursery schools in England and Wales, included under the special services regulations. Information is also given about certain technical classes for defective students. The schools for the physically defective are grouped, so far as is possible, to indicate the type of case dealt with. The addresses of the schools are stated and particulars are included of the average attendance at each one during the year 1925–26. The list may be obtained from H.M. Stationery Office, price 1s. net.

PROFESSOR G. MARAÑON has been elected president of the Spanish Royal Academy of Medicine.

THE first congress of the French Society of Oto-neuro-ophthalmology will be held at Strasbourg on May 25th and 26th, under the presidency of Professor J. A. Barié of Strasbourg, when a discussion will be held on nystagmus. Further information can be obtained from the general secretary, Dr. Velter, Avenue du Président Wilson 38, Paris, XVIe.

PROFESSOR CARLOS CHAGAS, director of the Oswaldo Cruz Institute, has been nominated professor of tropical diseases at the faculty of medicine at Rio de Janeiro. He has been succeeded in the post of director of the Public Health Department of Brazil by Dr. Clementius Fraga, professor of clinical medicine.

FROM July 1st, 1925, to June 30th, 1926, 14,445 persons died of plague in Java, or about a thousand more than in the previous year. The total number of pulmonary cases was 988. Small-pox was milder and less prevalent than in 1925, the case mortality being 10.4 as compared with 21.4 per cent.

THERE were 10,821 students in the French faculties of medicine on July 31st, 1926, as compared with 8,247 on January 15th, 1913.

PROFESSOR GAETANO FICHERA of Pavia has been appointed director-general of the Vittorio Emanuele III Institute for the Study and Treatment of Cancer.

THE Ettore Marchiafava prize of 8,000 lire for the best work on morbid anatomy and experimental pathology published within the last five years has been divided equally between Dr. Antonio Dioni, professor of morbid anatomy at Palermo, and Professor Raffaele Brancati of the Surgical Clinic at Rome.

A SERVICE of prophylaxis against measles has recently been established at Brussels; children can be injected with convalescent serum free of charge by a medical officer of the public health department on the application of a medical practitioner.

THE April issue of the *Norsk Magazin for Laegevidenskaben*, the organ of the Norwegian Medical Association, contains a sympathetic memoir of Lord Lister by K. Gren, with a bibliography and portrait.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the BRITISH MEDICAL JOURNAL alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the BRITISH MEDICAL JOURNAL must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the JOURNAL, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the BRITISH MEDICAL JOURNAL are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:

EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Mediscera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 4737 Dublin), and of the Scottish Office, 6, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 4361 Central).

QUERIES AND ANSWERS.

"S. C." asks for suggestions as regards diet or general treatment for a case of lupus erythematosus.

ICE CUPBOARDS FOR HOUSEHOLD USE.

"M. H." wishes to know of a reliable ice cupboard suitable for the kitchen of a household of five or six adults. Electric current is available.

*** Ice cupboards seem to be made by all the leading manufacturers; those manufactured by George Kent, Ltd., 193, High Holborn, W.C.1, are reasonable in price, and there appears to be no reason to doubt their efficiency. The prices for cabinet ice safes range from about £19 upwards. This lowest price secures a safe lined with zinc, properly insulated and fitted with galvanized wire ice basket, with waste-water tray and waste pipe running down the back wall of the safe. The provision compartment is ventilated and fitted with two removable shelves. The size is 44 in. high by about 20 in. wide and 20 in. deep. But this firm has many different kinds of refrigerating plant at all sorts of prices, and a catalogue would be useful. They have also what they call an effortless refrigerator for small households for connecting to the household electric supply; it is of 5 cub. ft. capacity, and the price is £70. The Kelvinator (by Kelvinator, Ltd., 29, Kingsway, W.C.2) is also

highly recommended, and is stated to be used largely in nursing homes. This firm has a cabinet refrigerator of 4.7 cub. ft. capacity and 7 sq. ft. shelf space which is suitable for a small home; its price is £62. We cannot speak from practical experience either of the safes or the refrigerators.

ULTRA-VIOLET RAY APPARATUS.

"R. F." asks what is the best all-round ultra-violet ray apparatus for use in general practice.

*** The mercury vapour lamp would probably be the most suitable for all-round general practice. The apparatus supplied by reputable makers differs in design rather than in efficiency. The limitations of the various sources of radiation will best be gathered by studying recent books on the subject, such as the third edition (1927) of *Ultra-violet Radiation and Actino-therapy*, by E. A. Russell, M.D., and W. Kerr-Russell, M.D., price 15s., or the second edition (1926) of *Artificial Sunlight and its Therapeutic Uses*, by F. Howard Humphris, M.D., price 8s. 6d. The question regarding running costs and "spares" can only be satisfactorily answered when full details are known of the inquirer's electrical supply. An inquiry of any of the firms advertising these appliances in the JOURNAL would, if these details were given, elicit the required information.

DIPLOMAS IN OPHTHALMOLOGY.

"D. O. M. S." asks for information regarding the time that would be required for one in general practice to work for a diploma in ophthalmology, and for information on books that should be read.

*** Definite courses of study are prescribed for candidates for the diploma issued by the University of Oxford and the Royal College of Surgeons of England. The courses are very similar, and require attendance on prescribed lectures and demonstrations, practical work, and clinical work. The course is strenuous and requires real effort. One year's study in a recognized hospital is also necessary before a candidate may enter for the examination, and in the case of the Oxford diploma two months of this year must be spent at Oxford. It will be seen from these facts that for one to attempt preparation for the examination for this diploma whilst engaged in private practice will mean a heavy double duty, so that it is not possible to suggest a time limit. Since the course of study will follow the set lectures and practical work, it will be better for the candidate to study those books indicated by his teachers. Further information on the course of study may be found in the *Handbook for Recently Qualified Medical Practitioners*, B.M.A. House, price 3s. 6d.

OPIUM SMOKE AS AN ANAESTHETIC.

DR. CHARLES S. KERR (Bothwell) writes: The case Dr. Deshmukh quotes (JOURNAL, February 26th, p. 410) was of a Siamese labourer—an Oriental. In them opium smoke has been used as an anaesthetic with good results. I, however, believe that its use is limited to people who have been accustomed to the effects of opium. My first and last experience of opium smoking in the Far East, not so long ago, was that it made me feel very sick and vomit—no recommendation for any anaesthetic. I understand this is the usual experience of Westerners at first.

INCOME TAX.

Replacement of Car.

"A. H. E. B." bought a car in 1924 for £207 10s. and replaced it by a similar one in 1926, receiving £50 for the old car against £163 as the cost of the new one. He was allowed £25 and £21 depreciation allowance for the years 1925-26 and 1926-27.

*** Our correspondent can claim as an obsolescence allowance, to be treated as an expense of the year 1926, £163−£50=£113, his net outlay, less £46, the total of the depreciation allowances received—that is, £67. His unexhausted capital expenditure will then stand at (£207+£113=) £320, less (£46+£67=) £113—that is, £207, and he can claim depreciation allowance on that figure—for example, at 15 per cent.—for the financial year 1927-28.

LETTERS, NOTES, ETC.

FOREIGN BODY IN RECTUM.

DR. ROBERT J. SAUNDERS (London, S.W.) writes with reference to the note by Dr. Honigsberger (Birmingham) in the JOURNAL of April 9th (p. 703). I had a very similar case two or three years ago—a lavatory attendant aged about 38. He complained of being unable to evacuate the bowels, owing to some obstruction and intense pain in the rectum while endeavouring to do so. On examination per rectum I felt what later proved to be a twig, similar to that described by Dr. Honigsberger, lying obliquely across the rectum, and requiring careful manipulation before it could be removed. To my mind it resembled the small branch or twig of a bunch of grapes, but the patient could not explain how it got into the bowel.

EARLY PARENTHOOD.

DR. W. E. GEMMELL (Westbury, Shrewsbury) writes: On the morning of April 14th I received a message to see a girl, aged 13, suffering from "pains in the back and shivering." I called on my usual round and was just in time to deliver a fine baby boy of 6½ lb. weight—to the alarm and horror of the mother and neighbours, who had been with the girl all the morning and had no inkling of the true state of affairs. There was a slight perineal tear, otherwise it was a perfectly normal confinement. The interesting point is the age of the parents. The young mother is aged 13 years 8 months. The father, whose identity appears to have been conclusively established, is aged 14 years 10 months. Impregnation must have occurred when the girl was 12 years 11 months old and the boy 14 years of age. According to the children's statement there was only one coitus, the approximate date of which is remembered. If that is so, it makes the case more extraordinary.

It would be interesting to know if there are any cases on record of younger parenthood (on both sides) amongst English children. Professor Glaister records two cases in which the girl was younger, but I can find no record in which both parents were so young.

HERPES AND VARICELLA.

DR. A. E. STENNING (Onslow, West Australia) writes to say that a man, aged 47, consulted him for an attack of herpes zoster, and, fourteen days later, his wife, aged 21, developed a typical attack of chicken-pox. He adds that the port of Onslow is relatively isolated, and, with the exception of these two, no cases of herpes or varicella have been noted there during the past five years. Dr. Stenning thinks that the husband must have contracted the herpes in the course of his duties, which brought him into contact with the shipping of the port, and have carried the infection as varicella to his wife, who had not suffered previously from that complaint.

"G. B. P." writes: With reference to recent correspondence as to the supposed connexion between these two conditions, perhaps some evidence on the other side may be of interest. During the past few years I have had several cases of typical herpes zoster in an institution where there are both adults and children and where they mix pretty freely. There has never been any evidence that the herpes cases were exposed to varicella nor have they ever given rise to a case of varicella. I have had odd cases of other exanthemata but never varicella. My experience in ships and establishments during nearly ten years' naval service was the same, although I was aware of the supposed connexion in those days. It is well to remember that chicken-pox is (*a*) very common, (*b*) very infectious, and (*c*) so universally mild that many persons do not call in a doctor and are careless about exposing convalescents and their fomites. I myself had chicken-pox when a medical student towards the end of a vacation, and found it quite impossible to trace the origin. Work among school children has taught me how very difficult it is to trace the source of some cases. I therefore suggest that the supposed connexion, founded as it is on evidence of a somewhat *post hoc propter hoc* nature, must be regarded as non-proven in the meantime.

DR. MARTIN SAGAR (Withington, Manchester) writes: I am bringing the following case before you only because Dr. Lynn Heard (January 15th, p. 124) has recorded herpes zoster following varicella, whereas in all the other cases the sequence was reversed. On December 27th a man, aged 43, came to me with typical herpes zoster on the right side of the neck. One of his children had varicella about a fortnight before. He complained of pain round the chest, but so far there is no eruption.

X-RAY TREATMENT OF RODENT ULCER.

DR. S. P. IMPEY (Capetown) writes: Under the above heading in the BRITISH MEDICAL JOURNAL of February 19th (p. 332) appears an interesting report of a paper by Dr. Davies on this subject. I agree with most of what he says, but am of opinion that the preliminary scraping which he advises in all cases is unnecessary. I have been treating rodent ulcer for upwards of twenty years with invariably good results. Without any scraping I apply the rays to the ulcer without filters in very superficial cases; in deep ulcers I use a filter. I apply a weak current for one hour every day until the part round the ulcers becomes dark red, without respect to measured dosage, for I have found that every individual does not respond equally to any dose. If a measured dose is relied on, then very often one patient gets too much and another too little. If we judge by results the desired effect is much more certain. My method has been to give small doses at frequent intervals in preference to one large dose, for I believe that the growth is best cured by inhibition and not actual destruction of it by other means. I think a cautery is as good a method as any other for actually destroying the growth, but the cosmetic effect is not nearly as good. By using my method the best cosmetic effects are obtained, for usually no mark is left to show where the tumour existed.

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